



GULBENKIAN
DESCOBRIR

**Spaces
between
Art and
Education**

“Eu sou o capitão da minha vida.”



ORCHESTRATED
WALK
2014

*I AM THE
CAPTAIN
OF MY LIFE



THE BODY
OF ACTION
2014



THE BODY
OF ACTION
2014



OTS
(OBJECTS THAT
TELL STORIES)
2015



LIVING
IN POETRY
2015

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FROM MY
NOTEBOOK
2015

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Spaces between Art and Education

Editors

Maria de Assis
Elisabete Xavier Gomes
Judith Silva Pereira
Ana Luisa Oliveira Pires

Coordination of edition and production

Adriana Pardal

Translation and proofreading

John Elliott

Graphic Design

Luis Alexandre/Silvadesigners

Photographs

Filipe Ferreira
Rodrigo de Souza

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- 13 **Introduction**
Why and how
to intervene
in the teaching/
learning process
Maria de Assis
- 29 **The 10×10 Project**
Strategies
and assessment
Judith Silva Pereira
- 39 **Guides by the
artists in the
10×10 project**
Between the epic
and the vortex
Catarina Lacerda
- 59 **Discovering
by doing**
Maria Gil
- 73 **Testimonies from
the teachers in
the 10×10 project**
Transdisciplinarity
and the
communication of
scientific contents
Ângela Rebordão
- 77 **An emotional
journey into
knowledge**
Isabel Machado
- 83 **Assessing students
after the 10×10
project**
Paula Cruz
- 91 **Reinventing
spaces between
art and education**
Genesis,
development and
main conclusions
of the research
project
Ana Luísa Oliveira
Pires, Elisabete
Xavier Gomes, Teresa
N. R. Gonçalves
- 119 **Appendix**
Micropedagogies

Introduction

Why and how to intervene in the teaching/learning process

12 13

Maria de Assis
Conception and direction

It is disconcerting that there should be general agreement about what needs to be changed in the current educational system and yet it is so difficult and slow to bring about this change. There is a widespread desire to change and there are various projects being led by different agents attempting more or less radical experiments. In the most extreme cases, it is the parents themselves who take their children out of school and assume responsibility for planning and structuring an education that they consider to be more in keeping with the challenges of today's world. There have been a considerable number of projects that have produced positive results, but to make these models universally applicable is a challenge that requires answers. One thing is certain: what was previously considered to be a general rule – namely that studying and taking a university degree would open the doors to a good job and make it possible to move up in life – is today being called into question.

Constraints

There are many reasons why we now find ourselves in this impasse. It is impossible to concentrate the knowledge that we need into twelve years of school education, followed by university studies. It is generally agreed that learning is a lifelong process, but yet we continue to increase the workload and to restrict the curriculum to a scheme that is organised according to different subjects, with the aim of teaching all students the same thing, in the same way, and essentially based on the teacher's own words.

It has long been understood that this excessive focus on the transmission/reproduction of knowledge kills curiosity and takes away the pleasure of learning, yet the introduction of “free” dynamics – involvement in group projects, autonomous research, games, study visits, etc. – is neglected in order not to waste time with “extra” work.

It has also been realised that it is impossible to teach for the “average student”; in practice, you sometimes raise the level or sometimes lower the level, which means leaving part of the class out of what is being taught. This situation is partly the reason why many students feel bored and lack motivation, and it also affects teachers, who sometimes cannot find any solution other than to accept the state of affairs, concluding that knowing how to teach (how to structure and implement a good lesson plan) is the part that they are responsible for, with the rest of the burden falling on the students, if they want to learn. Such a radicalisation of positions generates a vicious cycle that it is difficult to break out of, because the dominant culture in most schools continues to perpetuate the *status quo*: hierarchy, segmentation, homogeneity, isolation and a tendency to focus, above all, on the transmission of information. This school culture is so ingrained in the relationships of power, in the roles and the degrees of autonomy assumed by each intervenient in the educational process, in the management of the times and spaces of learning and in the mechanisms of control, that the situation has become

■ We are referring to such projects as “Turma Mais” or “Fénix”. See: Formosinho, Alves and Verdasca, 2016; Rodrigues, 2014.

● Relevant documents include: Winner, Goldstein and Vincent-Lancrin, 2013; Schonmann, 2015; Barrett, M., Byram, M., Lázár, I., Mompoint-Gaillard, P. and Philippou, S., 2014 (recommendation of the European Parliament and the Council of Europe on the key competences for lifelong learning, 2016).

natural, as if it were impossible to do things any other way. However, the longed-for democratisation of teaching, and the consequent broadening of the base of recruitment beyond the elites, calls for the system to be adapted to the new reality, under pain of producing the opposite effect from the one that is wanted, or, in other words, generating failure, exclusion and inequality, instead of equal access to the opportunities for integration and social affirmation.

Future trends

The current dissatisfaction is not just felt by teachers, students and parents and guardians. The demands of the labour market and of civic activity are not being matched by the premises and guidelines underlying training and education. This subject has been widely debated at the global level. The priorities identified by international organisations, as is the case with the European Commission, UNESCO or the OECD ●, clearly outline the competences that must be worked upon in order to face the challenges of innovation, sustainability, social cohesion and democracy. Portugal has been working in accordance with these recommendations and has sought to express them in its education policies. However, it has been difficult to reverse the trend towards bureaucratic centralism that continues to be noted in the various areas of State intervention. It was only quite recently, at the end of the first decade of the twenty-first century, that reforms were decreed which gave rise to the first educational policies of the new generation, recognising the imperative need to involve the school and teachers in the process of change, which means giving autonomy to schools and trusting in their capacity to solve their own problems. This process of renewal has already borne fruit, with the further development and spread of some models that have produced good results ■, but there is still a long way to go, because, in order for change to be sustainable, it has to take place at various levels, and there continues to be a great distance between the administration of education and the classroom itself, which is, after all, the place where the success of the system is actually decided.

Beyond the curriculum

It is generally agreed that, throughout our lives, and most particularly at school (as this is a space-time that is pivotal for the individual's formation and growth), we need to develop some habits and attitudes that are indissociable from our capacity to face the challenges of the global society in which we now live. In concrete terms, it is important to be able to question and identify problems and to look for solutions, relating and recombining ideas and imagining new scenarios. These are mental habits that must be developed in order to construct knowledge, change behaviours, redefine rules and invent new models that can replace the ones that have shown themselves to be obsolete and ineffective in today's world.

In parallel to this highly creative *mental gymnastics*, which is far removed from the simple act of memorising and reproducing the knowledge that is transmitted, we also have to take into account a set of attitudes and values that are an integral part of the construction of the personality and which, for this very reason, are strengthened and rooted in the phase of growth that is experienced at school. Persistence is one of these attitudes, implying not giving up when faced with difficulties, daring to be different and tolerating uncertainty. Equally important is discipline, not so much in the sense of obeying the rules, but more in the sense of being meticulous in developing one's own techniques for research and critical analysis, with a view to ensuring continuous improvement. Self-confidence, collaborative work, communication and the capacity to negotiate complement this range of qualities that can make a difference in this twenty-first century, marked by multiculturalism, interdependence and the challenges of growth. I should stress that I am referring here to habits and attitudes that cut across all fields, and that are not acquired in a particular curricular subject, but instead in the way that it is taught.

The classroom at the centre of change

The desired changes must necessarily pass through the classroom and the effective learning that is achieved by students. Teachers are fundamental elements in this process because they are the ones on whom the diversification of pedagogical strategies depends, with the introduction of a multiplicity of different registers, languages and modes of intervention. Only teachers can invent, experiment and collaboratively construct a broad repertoire of initiatives and ways of working with their students. By assuming the role of teacher-tutor, they have in their hands the power to instigate, provoke and inspire students, being aware that most of the information is available at the distance of a simple click, and that the greatest challenge is preparing them to deal with this information. Such a challenge involves identifying credible sources, critically analysing information, distinguishing what is essential from what is accessory, relating contents and appropriating this knowledge so as to be able to use it in concrete situations.

This focus on the qualities of learning, which is to be incorporated across the board into the didactics applied to the teaching of any school subject, is in line with what has been debated and identified through the assessment of the projects currently being implemented to some extent all across Europe (including the above-mentioned projects, which are taking place in Portugal) and of which the *10×10* project itself forms a part. These are projects with distinct models of intervention, but which generally agree on the identification of a set of central prerequisites for bringing about significant changes in the processes of teaching and learning: investing in creative pedagogies, fostering a relationship of empathy between teacher

● The Calouste Gulbenkian Foundation's investment in cultural and artistic education is not limited to its direct action in a non-formal context. Through its funding programmes, the Foundation has supported many innovative projects in formal education, in which the arts and culture are used as a strategy for educational purposes associated with entrepreneurship, social integration and civic education.

and student, giving the student an autonomous voice, approaching all subjects and literacy skills from an interdisciplinary perspective and linking curricular contents to the real world.

Field of intervention of the *10×10* project

This publication is the result of the action-research process that the *10×10* project, promoted by the Gulbenkian Education for Culture and Science Programme, has put into practice in the course of four separate editions. The results obtained corroborate the needs and the priorities already identified by other projects. What was new under the scope of the *10×10* project was a body of small pedagogical activities, given the name of *micropedagogies*, which are shared here with the aim of helping interested teachers to rethink their teaching practices. In this sense, this publication is intended to be a kind of manual, or, in other words, a useful working tool, with concrete ideas that anyone can use as a source of inspiration, but which, at the same time, deviates to some extent from the idea of a manual as a book of recipes that can be applied directly and blindly.

Over the last few decades, the Calouste Gulbenkian Foundation (FCG) has been promoting an intense educational programme for schools to be applied in a non-formal context ●. The close collaboration with schools made it possible to better understand the educational reality *in situ*, as well as the repeated complaints that teachers made about their working conditions. It was impressive to see how teachers were surprised by the behaviour of their students when they were involved in the FCG's educational activities. The motivation and commitment of these students and the quality of the work that was produced, as well as the capacity that they demonstrated for willing participation, were frequently regarded by the teachers as genuine discoveries... It was this same perplexity that lay behind the conception and design of the *10×10* project: to place artists (artist-mediators who work regularly with the FCG) and teachers in collaboration with one another, with the aim of reflecting upon and exploring joint pedagogical strategies that could help to mitigate the problems felt by teachers and transfer to the classroom the commitment, motivation and capacity for work shown by the students during the educational activities that they undertook at the FCG (see "Strategies and assessment" by Judith Silva Pereira, pp. 29-36).

Between art and education

Involving artists in an action-research project in a school environment does not necessarily mean introducing art subjects into the equation. There are many ways of combining art and education and, in the case of the *10×10* project, what was at stake was, above all, the possibility that it offered to engage in creative activity. Although this is a quality that all human beings have, artists have a need – and the privilege – to be constantly exercising their creativity. Each new project is an open field for exercising their imagination, for being

bold and experimenting with new paths. It is in the confrontation that is produced between the creative practices that are peculiar to artistic production (in any of its disciplines) and pedagogical practices that tend to be subject to formal rules and measurable impacts that the *10×10* project positions itself as a space of dialogue and freedom. A kind of *contamination* takes place that shakes the very foundations of the system, removing constraints and introducing new dynamics and possibilities. The work developed by the artists together with the teachers (in this case from secondary schools) enhances the contents of the curriculum, but also adds to them strange elements, separating the subject from its conventional didactics. On the other hand, the use of the different artistic languages is also put to one side, separating the artists from the production of an artistic project/object. Neither is art reduced to pedagogy, nor is pedagogy reduced to art. It is, instead, a question of placing the creativity implicit in artistic practices at the service of the concrete problems faced by the teachers and students of a particular class. In this way, the results of the experiments undertaken together may become an integral part of the teacher's repertoire of strategies, since they do not call upon only the knowledge and specific techniques of the different artistic languages.

Priorities for intervention

Although the artists acted in the context of just one class, basing their contributions on concrete situations, the sharing and assessment of particular cases made it possible to identify common concerns in which everyone considered it to be essential to invest.

I) Promoting interpersonal relationships

Working on the relationships between teachers, between students, and between teachers and students, bringing feelings and affections, pleasure and empathy into the school, in particular into the classroom itself. Forming groups of varying sizes (pairs, groups of three or four, dividing the class into two groups, etc.), alternating the members of each group, bringing personal stories into play, with the teacher participating in the group dynamics on equal terms with the students, holding sessions to openly question topics of common interest, these are just some examples of the dynamics used to create a cohesive group/class and of the teacher's involvement in the process (see "Constructing groups and interpersonal relationships", p. 121).

II) Promoting attitudes that facilitate learning

Treating students in an individualised way, using different roles and approaches, knowing how to gain their attention, focus their concentration and encourage team work, always with the aim of stimulating the body and integrating it into the learning process, of giving students a voice and a sense of responsibility and instilling in them a willingness to observe things regularly, with all their senses alert,

and to record the results of their observation, resorting to different languages. Or, in other words, recording what is considered important about the subject-matter, but also their concerns and anxieties, their experiences, the ideas that arise in relation to an event (see "Facilitating the learning of subject/curricular contents", p. 155).

III) Developing motivational dynamics

Stimulating the connection with concrete matters, introducing surprises, but also rituals. Because one only learns what one wants, it is essential for the lessons to be made more dynamic and the curricular contents more pertinent in the eyes of the students. To achieve this, it is important to always relate the subject with the circumstances of the students' lives and with their everyday references. Another Important aspect is to reveal to students what is invisible to them, either because it is too small or too large. In fact, students gladly accept the challenge of imagining games or exercises that involve using objects or their own bodies in order to materialise laws of Physics or Mathematics (see p. 174). This type of dynamics is especially useful for integrating and capturing the interest of those students who have greatest difficulty in dealing with abstract concepts (see "Promoting attitudes of motivation, attention and concentration that facilitate learning", p. 133).

IV) Multiplying the spaces of learning

Going out of the school to give the lesson in a museum, a theatre, a botanical garden or in the city itself, but also occupying the different spaces in the school – the gymnasium, the auditorium, the library, the playground – and transporting this insight about the "stages for learning" into the classroom itself, transforming or making a different use of its resources and devices, namely forming circles or islands with the tables and chairs, using the floor as a table or the walls lined with scenery paper to take notes. Requesting the presence of friends and relatives, or members of the community is yet another way of opening up the school to the world, inviting other agents to take part in the teaching/learning process.

V) Promoting the teachers' role as agents

Creating contexts for interaction between teachers, treating them as agents of their own professional improvement and enhancing their contribution to the production of common knowledge, with the aim of creating interactive professional communities. Activating the teachers' willingness, knowledge and power, giving them the support and confidence they need to make experiments in the school context. In fact, even when teachers feel they have good reasons for introducing innovations into their approach, doing things differently attracts attention, gives more work, and is a risk. On the other hand, it is a fact that teachers enjoy a fair amount of autonomy in the classroom, and, for this reason, they must be encouraged to position themselves as the authors of their own

pedagogical projects, playing an active role as agents of change.
The artist's role was frequently to activate this awareness that a great deal can be changed from within the system, should the teacher so decide, in collaboration with peers who think in the same way.

Modes of intervention

The creative pedagogies developed under the scope of the 10×10 project invest in disruptive strategies and introduce alternative perceptions about the established rules. The teacher knows the school so well that he or she already knows what can and cannot be done. Coming from outside, the artist makes proposals that the teacher would never imagine putting into action, but which, when their premises and intentions are duly analysed, not only show themselves to be pertinent, but also possible and particularly effective. Some of these proposals became a recurrent feature in multiple formats and contexts:

Disruptive strategies

Introducing creative challenges

Using objects, images, sounds, people, events or actions that are deliberately unexpected, strange, or taken out of their normal context. These also function as agents that stimulate the production of meaning, requiring an individual and/or collective exercise of mobilising knowledge and experiences.

Some examples: using mobile phones to create animated stories that involve the use of mathematical concepts; using smells to provoke associations of ideas that help to unblock writing; appointing students to act as “signallers” and point out the moments when they need to write down in their notebooks what the teacher is saying.

Creating artefacts

Producing devices that are specific and hand-made or simply used to store and/or exhibit material that has great personal or cultural significance.

Some examples: poetry cases; graphic diaries; whisperers; mapping the self.

Special events

Creating stimuli for producing situations that are very different from normal, giving greater depth to what is being done and significantly expanding the group to include the relationship with the family or with the community.

Some examples: the presentation of works made by the students at the school or outside the school, as is the case with the slogans in English, scattered on post-its all over the school walls, or with the posters made by the students with the graphic (statistical) translation of a survey conducted with the school population; the public presentation of planets invented by the students in the subject of Biology, or the dinner in the school canteen, prepared by the students under

the guidance and supervision of a guest chef, to be enjoyed among their classmates, together with teachers and family members. Being included in the material associated with sustainability, as taught in the subject of Philosophy, the dinner involved going to the market to gather the products used in its making.

Narratives of the self

Creating shared spaces, both oral and written, based on personal stories or on records of testimonies gathered in the community. Besides helping to consolidate the group, these shared opportunities foster the development of porous spaces that mobilise knowledge acquired outside the school, coming from the family or the community. They also make it possible for the teachers to participate and to reveal their own vulnerability, which causes them to appear more human and helps to strengthen the teacher-student relationship. Some examples: shared biographies; the introduction into the classroom of letters written by the students' family members; teachers confiding to the students secrets about their own private matters.

Using the body

Creating situations that enhance the use of the body in learning processes, as well as exercises that increase the potential of individual and collective motor coordination, or which promote the semantic analysis of the body's postures/behaviours. Sometimes, these situations create opportunities for exploring the ridiculous side of things and lead to the switching of roles, in such a way as to denounce conventions and prejudices.

Some examples: embodiments of chemical or biological phenomena; concentration exercises such as the “Ball game” (p. 140); icebreaker exercises such as stretching; more elaborate exercises involving the bodily enactment of poems.

Serious games

Using strategies with playful or humorous elements, which traditionally lie outside the school's way of thinking about and doing things, but which prove to be highly effective in increasing the potential of significant learning processes.

Some examples: creating invented words to stimulate research into the etymology of words; exercises involving the reading of poems with the introduction of repeated syllables or articulating them in a stutter; the “Poetry machine”; “Hangman”.

Alternative rules/values

It is important to note that these practices introduce alternative values to individualism, competitiveness and blind efficiency (with the corresponding burden of stress), making it possible to engage in more creative and harmonious experiences, which will certainly have an impact on the life of students, the owners of the near future.

The necessary time

Using the time needed in order to perform a certain task as well as possible is considerably more important than adjusting the work to the time available. Instead of using time in a sensible fashion in order to maximise its efficient use, the aim is to encourage the maximum dedication to the work that is being produced, enabling students to become more seriously and more profoundly involved. Greater importance is given to the qualities of time, such as rhythm, fluency and improvisation, instead of speed.

Group success

In a first phase, greater emphasis is given to participation in activities rather than to the results obtained from these. In this way, the quality of the actions performed increases with continuing participation. Emphasis is placed on sharing and collective creation, instead of individualisation and competition, and an attempt is made to replace the success that is hierarchically organised according to individual classifications with a feeling of collective success. In this way, encouragement is given to a greater orientation towards inner motivation and assessment, bringing into play various situations of self-assessment and peer assessment (see “Assessing students after the 10×10 project”, p. 82).

Good routines

Routine is established in order to fulfil certain objectives, but it is performed in different ways. Doing concentration or memory exercises every day does not always mean doing the same exercises. Furthermore, exercises were performed that use the body and frequently have a playful component. Repetition is part of the game and is welcomed, instead of being regarded as simply predictable, mechanical and boring.

The introduction of proposals of this type, and of the rules underlying them, gave rise to results indicating a change of attitude on the part of students – by feeling respected, they themselves began to show greater respect. In fact, giving greater value to the identity and creativity of each individual and paying greater attention to their suggestions and contributions results in successful learning outcomes.

Introduction to the concept of micropedagogies

1. Definition and characteristics

The expression *micropedagogies* refers to concrete actions that have been tried out by artist-teacher pairs or trios (one artist for one or two teachers and one class) in the classroom context. These actions can be set in motion in different ways in order to design pedagogical strategies with the aim of promoting the learning of some theme/school subject. The intention is that these micropedagogies will establish

a close relationship between feeling, doing and thinking, in order to enhance the curiosity of students and make the subject-matter more relevant within the framework of their interests and motivations.

While, on the one hand, macroscopic approaches to education refer to the school system, the philosophical positioning about what education is, the study plans and the pedagogical projects, on the other hand, microscopic approaches are linked to the classroom space and the way in which the participants (teachers and students) (inter)act in this space-time. While macropedagogy is concerned with the contents of learning (what?), micropedagogy, as the expression of a microscopic approach to education, refers to the way in which these contents are treated inside the classroom (how?).

The main differentiating feature of micropedagogies is the fact that these are included amongst the techniques inspired by contemporary artistic practices (for example, focalisation, improvisation, research of materials, experimentation, brainstorming, role play). However, micropedagogies do not claim to have an exclusive right to this artistic inheritance, since they are aware not only that contemporary art itself draws its inspiration from many areas of knowledge and many ways of doing things, but also that its transposition to the field of education implies a framework and a reflection that are pedagogical in nature.

Micropedagogies use different mechanisms, materials and tools (as, for example, objects, photographs, videos, the Internet, notebooks, smells, sounds, etc.), with the aim of encouraging the participation and involvement of students in the construction of knowledge and enhancing the creative experience of teachers. Many of these mechanisms are generic in nature, but some were designed or adapted specifically for the pedagogical context from the universe of artistic creation of the artists involved in the project (this is the case with the “whisperers” and the “Poetry machine”, among others, which are presented in the list of micropedagogies included in the appendix, p. 118).

Micropedagogies are characterised by their small scale and their search for flexibility and transferability. This search is materialised in the premise that the actions undertaken can be freshly recombined and linked together in different ways, adapting to different contexts and different curricular contents. Variable actions are looked for and tried out, which must not be fixed and established simply for the purposes of reproduction. Instead, they must be used as separate pieces (as in a *tangram*), which are reorganised on each occasion, depending on the contexts, the groups and the pedagogical aims that one wishes to achieve. Or, in other words, purely and simply reproducing a sequence of micropedagogies, without defining and explicitly stating, from the outset, the aims and conditions that guided their choice, sequence and application, may completely distort the nature and effectiveness of the pedagogical strategy.

In this way, there are no special recipes for using micropedagogies, nor any rules governing the way in which they should be combined with one

another. They are intended to be the raw material, the ingredients that can be studied, tried out, savoured, mixed together and processed in order to produce a pedagogical meal that can be served in a different fashion each time.

Given their experimental nature and their direct links with the artistic world, micropedagogies are intended to be a foreign body in terms of the established pedagogical practices, as it is considered that their disruptive potential is one of the presuppositions that can make the greatest contribution to effective learning. Transforming micropedagogies into a routine or using them mechanically cancels out their potential for stimulating the creativity and participation of teachers in the reconstruction of their own pedagogical practices, as well as the involvement of the students in the construction of their knowledge. Throughout the various editions of the *10×10* project, the potentialities that we have just mentioned were tried out and checked – the transferability, flexibility and pedagogical intentionality of the emerging micropedagogies, as well as their effective strangeness and innovation/creativity in relation to the established practices.

2. Expected impacts

2.1. Attitudes

Being geared towards pre-defined objectives, micropedagogies are designed to promote the development of attitudes and behaviours that are essential for learning. And it is important to stress that it is not a question of promoting attitudes and behaviours just among the students. The focus is a plural one, being directed towards the student and the teacher, at an individual level, and to the relationship between the various agents involved in this process – i.e. it is geared not just towards the relationship between the students, but also between these and the teacher.

Concentration, attention, listening to the other, responsibility, respect, group feeling (complicity, solidarity, team spirit), curiosity, initiative, singularity, commitment and participation represent a set of attitudes and behaviours commonly considered to be essential to the teaching/learning processes. These must be worked upon and implemented in the classroom from the point of view of relationships. Constructing pedagogical strategies from micropedagogies always implies considering the dynamics of relationships. If I want to be heard, I have to know how to/choose to listen to others; if I want to be respected, I have to know how to/choose to respect others; if I want change, I have to change myself.

It also happens, quite frequently, that a class is composed of different groups. In this case, besides attention and concentration, it is necessary to stimulate the feeling of belonging to a group, creating empathies and encouraging the development of an atmosphere of mutual trust and respect. Continuously using micropedagogies at key moments in the lesson, creating rituals that can instil a routine offering trust and confidence, may be regarded as an effective way of doing this.

● The organisation of micropedagogies around three main axes/categories and their respective definition were carried out with the contribution of the researchers Ana Luísa de Oliveira Pires, Elisabete Xavier Gomes and Teresa N. R. Gonçalves, of the Education and Development Research Unit of the Faculty of Sciences and Technology of the Universidade Nova de Lisboa.

2.2. Skills and competences

Micropedagogies also contribute to the development of the core skills and competences associated with concrete curricular contents. In fact, the skills required for facing risks, memorising, associating and relating contents, selecting materials, developing a critical spirit and creativity, imagining, making oral and written presentations, are generic cross-sector or transversal skills that are of prime importance for any lifelong learning process.

The mechanisms used by micropedagogies are designed to develop competences and work on curricular contents in a dynamic and interactive way, bringing transversal skills into play and establishing intrinsic links between different kinds of knowledge.

Organisation of the micropedagogies ●

Taking into account the diversity, wealth and multiple potentialities that are included among the pedagogical strategies tried out by the *10×10* project, an attempt was made to find some central lines of analysis/categories that would make it possible to place them in a contextual framework and organise them in such a way as to facilitate their understanding.

Although it is recognised that some of the micropedagogies gathered together here may contribute to more than one aim (they are not hermetic and impervious to one another, so that it is possible to identify certain overlapping areas), it was decided to group them together according to their main aim/intention, organising them around three main axes/categories:

- I. Constructing groups and interpersonal relationships
- II. Promoting attitudes of motivation, attention and concentration that facilitate learning
- III. Facilitating the learning of subject/curricular contents

The first of these axes related to a set of strategies that mobilise various pedagogical games, exercises and/or actions, their main purpose being to construct groups and promote interpersonal relationships in the context of the class as a whole. These activities are designed to promote self-knowledge and knowledge of others, verbal and non-verbal communication skills, attitudes of cooperation and mutual assistance, contributing to the creation of ties of affection and to the cohesiveness of the group.

The second axis includes a range of strategies – namely exercises of memory, attention, concentration, listening, relaxation – which are mainly designed to arouse the interest and motivation of the students, as well as to develop the attitudes of attention and concentration that are necessary for learning. Also included in this category are some strategies that function as organisers/facilitators of significant learning.

The third and final axis includes a fairly wide-ranging group of pedagogical strategies geared towards the learning of the contents of the syllabuses of different secondary school subjects. Also included in

this category are strategies designed to facilitate the memorising of specific complex concepts from the subjects of Biology, Chemistry or Mathematics, strategies that promote the construction of significant relationships between the concepts and topics contained in the syllabuses of various subjects, such as Visual Arts, Biology or Portuguese, and the everyday life of the students, as well as strategies designed to promote the creativity of students in the various subjects, as is the case with Portuguese or English.

Advice for users of the manual

In the list of micropedagogies in the appendix (see p. 118), a description is provided of some of the micropedagogies used under the scope of the 10 × 10 project and contained within the three axes referred to in the previous section. These descriptions will always be incomplete, because it is impossible to express in words all the details of the concrete actions and their respective contexts. For this reason, the appendix is devoted to the presentation of five guides in which the micropedagogies are referred to according to their specific problems and contexts, with the aim of highlighting the respective process of their emergence.

While this manual is certainly useful for those teachers who participated in the project, and who can find here a record that will help them to recall the micropedagogies that they used or which they saw being implemented by their colleagues, it is hoped that reading the guide may also inspire the wider community of teachers, educators and artists who are interested in renewing their pedagogical practices.

Since the micropedagogies must be created from scratch for the specific students of a given class, and for the purposes of a particular subject-matter, we next present a list of actions that were recurrently found in the descriptions of the various micropedagogies, complemented by a list of recommendations identified by the teachers themselves as particularly effective and relevant for their pedagogical practices.

It is considered that confronting the reader with different approaches to the micropedagogies will help to reinforce the idea that these are not intended to be directly applied from the manual, but instead to be reinvented and recontextualised by each user, according to their needs. In this way, the micropedagogies are firstly introduced through various actions and recommendations, and then through guides that serve to set these actions in motion, explaining what motivated their emergence, and finally being followed by the actual description of the various pedagogical proposals.

Examples of actions

- Blindfolding (in order to activate the other senses);
- Mapping/recording occurrences (conversations on the bus, daily routines, sounds);
- Mixing registers (writing a flavour, drawing the movement, tasting the sound);

- Stimulating the dialogue with the various selves that inhabit me (writing in the third person, imagining an *alter ego*, heteronyms);
- Writing compulsively (lots of texts, short texts), placing the emphasis on communication and sharing (and not on correcting mistakes);
- Sharing tasks between teachers and students;
- Occasionally altering the classroom space (rearranging tables and chairs differently from usual);
- Doing warm-up exercises/activating and preparing the body for learning;
- Negotiating decisions;
- Instilling rituals;
- Creating mnemonics;
- Creating role play situations, adapting some of the examples (proposed by the manuals) to real situations that are relevant to the culture, experiences and interests of the group of students with whom one is working;
- Delegating responsibilities to the students;
- Teachers participate in the exercises that they propose to students;
- Presenting works outside the classroom, in public spaces around the school and even outside the school;
- Creating situations of surprise or suspense;
- Introducing the real and the personal into the course contents through photographs, events or personal objects related with the subject-matter.

Examples of specific recommendations for the teacher

- Rethinking the contents of a school subject through contact with non-formal educational contexts;
- Breaking the teacher's professional isolation, creating a space for fruitful dialogue with other colleagues;
- Learning to project one's voice and to position one's body, in order to control energy and manage class time;
- Working on different school subjects from the same set of questions;
- Creating inter-class and inter-school communities;
- Inviting the family to take part in the construction of knowledge and as a way of finding out about the world;
- Giving the student a voice, beyond just simply answering questions relating to the subject-matter and assessing whether it is right or wrong;
- Verbalising what one feels and cultivating an analytical reflection on what one does;
- Enhancing the use of available resources by regarding them as challenges and not as inhibiting factors;
- Thinking about the school as a space where meaning(s) is/are created and not just as a place where one goes to gather information;
- Cultivating positive transgressions;
- Cultivating pedagogical strategies that are creative and not merely (re)productive.
- Sharing experiences, doubts and results with one's peers, with a view to improvement, mutual cooperation and assistance and constructing a common repertoire of pedagogical strategies.

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The 10×10 Project Strategies and assessment

Judith Silva Pereira
Monitoring
and assessment

PRESENTATION OF THE 10 × 10 PROJECT

The first edition of the 10 × 10 project took place in the 2012/2013 school year. Essentially geared towards the training of teachers, the project placed emphasis on the joint work undertaken by these same teachers and a group of artists, designed to encourage transversal learning processes that are capable of transforming pedagogical practices.

Combining strategies of an artistic and pedagogical nature, the 10 × 10 project breaks the formal structure of the lesson since, besides giving rise to a transformation of the physical space of the classroom and the different areas where the class takes place, it invests in the motivation and learning process of both teachers and students, leading them to experience other ways of doing things, other ways of thinking and other ways of learning. Being based on artistic practices, it proposes creative methods for teaching and learning, combining cognitive elements with affective and social aspects.

In the course of the project's implementation, reflections were made about the successful realisation of its potential and some changes were introduced, namely in relation to the setting up of the work group in the classroom context (initially, there was one teacher for one artist; today, the work is performed by two teachers and one artist), which not only benefits the class, but also allows for a more fruitful combination between their different areas of knowledge – thus giving rise to a growing adaptation of the micropedagogies to the desired aims.

INTENTIONS

The approach to this project involves a permanent movement of action-reflection-action, making it possible to construct innovative and significant learning situations in the classroom context.

The intentions are defined as follows: (I) the development of a collaborative work between teachers and artists, enabling them to put into practice a series of methodologies, creative strategies and innovative pedagogical and didactic materials about key contents in the subjects studied in the 10th year of Secondary School; (II) the inclusion in teaching practices of communication and knowledge-building strategies that are effective in capturing the interest and motivation of students, with a significant contribution to the success of the learning process; (III) the promotion of a systematic reflection on the methodologies, strategies and resources brought into play, in order to permit the necessary readjustments; (IV) the “contamination” spreading to other teachers at the schools where the project is being developed and to the rest of the educational community, due to the effectiveness of the practices implemented and the presentation of public classes.

The data quoted throughout this text come from different sources, namely: notes taken in the assessor's diary, while she monitored the project's implementation; interviews and questionnaire surveys applied to those taking part in the project (teachers and students); critical reflections by the teachers.

The first phase of the project was characterised by an artistic residency held in a space of the Calouste Gulbenkian Foundation.

At this meeting between teachers, artists and moderators with different perspectives and areas of knowledge, there was a sharing of knowledge and individual and group reflections on pertinent themes and on the different proposals that had been tried out before.

The intense work that took place over a period of six days was designed to: (I) generate complicities between all the participants, promoting interpersonal relations and group dynamics; (II) to develop strategies that conquer and motivate the participants; (III) to set in motion reflection on the micropedagogies experienced and on their contribution to the changes introduced into teaching and learning practices.

In the course of these few days, teachers experienced various dynamics that encouraged the transformation of some of their teaching practices. I now list some examples that I consider relevant.

— *Creative self-presentation* – after each of the artists have presented themselves in a creative way, the teachers are invited to do the same. Used in the classroom, this strategy provides a good motivational impetus for the students, making it possible to create a relationship of empathy with the teacher.

— *Short exercises* – brief activities proposed by the artists, which encourage a relaxation of both body and mind, challenging the senses to take part in this creative act; these exercises stimulate self-confidence and trust in the others and promote interpersonal relationships, contributing to the formation of a cohesive group, capable of sharing their experiences, ideas and opinions, and also being capable of committing themselves to the achievement of common goals in a harmonious manner. When applied in the classroom, these exercises not only make it possible to achieve the aims already outlined, but help to recover the attention and concentration of the students, relieve tensions and develop a corporal awareness and a sense of well-being.

— *Long-term dynamics* – the proposals that each artist develops with the participants call for learning through the use of the body and senses; they explore the potentialities of the voice and gestures, rhythm and movement in different contexts of interaction. Furthermore, these dynamics establish relationships with the various areas of artistic knowledge and combine various strategies and resources.

— *Teachers' proposals* – realised individually or in pairs, these interventions reveal some of the strategies and resources used in the classroom, suggesting possibilities for linking together the contents of different school subjects. In this way, it is possible to become familiar with the “pedagogical styles” and the way that each of the teachers involved in the project has of communicating and interacting.

— *Thinking sessions* – guided and coordinated by a philosopher, they offer the chance to debate educational themes. At the second session, just before the end of the meeting, the dialogue is structured around the problematic situations presented by each of the participants in the course of their residency.

— *Moments of reflection* – throughout the course of the artistic residency, various opportunities arise for the participants to develop a critical and reflective stance, enabling them to clarify doubts and share sensations, perceptions and knowledge.

— *Lightning projects* – the participants are divided into small groups and have fifteen minutes to work on a theme, and then three minutes to present it in a creative way, using some of the languages previously tried out.

The second phase of the project took place during the first period of the school year at those schools where the participating teachers worked; these were accompanied by the artists and interacted with the students of the 10th year of compulsory education from the classes for which they were responsible.

The artist intervenes directly with the teacher, based on the receptiveness and interest demonstrated by the latter and on the close observation of his or her classroom practices. In order to formulate their suggestions, the artists must also consider the attitudes shown by the groups of students in the class as a whole. Their intervention covers the fields of planning and designing the project; more precisely, they have to prepare strategies and activities of an artistic nature that can be linked to those of a pedagogical nature, taking into account the syllabus of the subjects and its effective apprehension in the classroom context.

To this end, micropedagogies are conceived that are designed to improve the students' motivational capacities, their attention, concentration and ability to memorise certain things. On the one hand, the aim is to facilitate understanding of the curricular contents; on the other hand, it is to promote interpersonal relationships, fostering unity and the cohesiveness of the group/class. It should be noted that the body has been used as a major frame of reference, not only to enhance the apprehension and understanding of more complex concepts, but also to stimulate the development of various other competences on the part of the students.

In this way, the classes are characterised by differentiated practices, generally generated by the artist, with the teachers being active elements in adapting these proposals to the curricular contents and applying them in the classroom context.

These learning strategies may be inspired by a series of micropedagogies that have previously been tried out in the residency, or may be created by the artist and adapted to the class context, taking into account the students' needs and interests. In these micropedagogies, *error* takes on a special significance for the process of knowledge building, for it motivates a reflection that leads to the recognition of the complexities involved in the teaching and learning process.

In the course of the project, the development of strategies for undertaking individual and group work is encouraged, with there being different ways of setting up the groups depending on the objectives of the task that has been announced. Research strategies are also applied, in which, once the problem has been formulated, the student looks for information by studying current affairs. Data are analysed in such a way as to respond to the problem in a creative and innovative fashion. All the proposals implemented are then reflected upon and systematically readjusted, in order to make them more effective.

Still in the second phase, two thinking sessions are held with the students, the aim being to help their ideas to emerge, illustrating them through concrete examples and, in some cases, reformulating them in accordance with the dialogue established between all of those involved in the project. During the process of reflection, the students are led to question their presuppositions and/or to request complementary information to clarify the understanding of the ideas expounded.

The third phase refers to the public lessons, where students, teachers and artists share with the public various activities demonstrating the work process developed in the classroom context, some results of the dynamics that were experienced, and reflections on the difficulties that were felt and their more successful features.

These classes follow a script that is constructed together by the students, teachers and artist, based on the feedback from the work undertaken, and they may have a variety of formats. They are expected to constitute moments when the micropedagogies presented will spread from one group to another.

The Calouste Gulbenkian Foundation undertook a number of partnerships with the different schools where the project was implemented. However, besides these, there were other partnerships that showed themselves to be of great importance, because of the way in which the project could be transformed and questioned in relation to the specificities of each context.

I should like to begin by mentioning the partnerships with Oficina, in Guimarães, and Teatro Nacional de São João, in Porto, and the role played by their coordinators Lara Soares and Luísa Corte-Real, which made it possible to enhance the work developed at the secondary schools of Caldas das Taipas and Cerco. In fact, according to these coordinators, the partners that they chose collaborated on the project in a committed fashion and developed interventions at the schools, sharing experiences, problems and creative solutions. Both coordinators recognise the same priorities for the project, stressing that this makes it possible to work on the continuity of the school space, strengthening the networks of cooperation between the world of the theatre and the world of the school, between the cultural space and the academic space. Although they have different motivations for investing in the educational programming of projects of this nature, the coordinators believe that the *10x10* project makes it possible to create strategies that motivate learning in teachers and, consequently, in students, both inside and outside the school space, since it provokes a disruptive effect on the everyday established practices in the school and family communities, with this being one of its most fundamental lines of intervention.

Setting up partnerships therefore makes it possible to consolidate strategies, offering an optimised management of human and financial resources and a direct sharing of practices. Another of the partners in the *10x10* project is the Centro de Formação de Escolas António Sérgio (CFEAS), the teachers' training centre in Lisbon, which immediately recognised the importance of this initiative for the training of teachers and embraced the project right from the very first moment. It consequently became a key partner and supported, accompanied, supervised and assessed the different moments that helped to shape the epistemological and praxeological development of the project.

Another aspect to be stressed in this partnership has to do with the accreditation of the *10x10* project through CFEAS by the Scientific and Pedagogical Board of Continuous Training (CCPFC), the body that is responsible for the accreditation of teacher training in Portugal, for the purposes of promotion and advancement in the teaching career. The scientific and pedagogical requirements demanded by the process-

REPERCUSSIONS OF THE PROJECT

■ These documents can be consulted on the website of the Calouste Gulbenkian Foundation's Descobrir Programme.

● Of the 40 teachers taking part in the project, 10 are teachers who work at schools associated with CFEAS.

es for the accreditation of the continuous training of teachers by that body reveal the recognition and the importance that this institution gave to the project at a national level, recognising its scientific, educational and pedagogical relevance, with impacts on the professional and personal development of the teachers who participated in the project ●, as well as on the improvement in the students' learning processes and the functioning of the school community.

It is to be noted that this project was accredited in regard to two training categories: the Artistic Residency in the category of Training Courses (originally having a duration of 40 hours, and subsequently 50 hours, amounting to 1.6 and 2.0 credits, respectively), and the classroom project in the category of Training Workshops, including the design of the curricular projects, the strategic work plan, the participations in the general rehearsals and the holding of the public classes (with 25 hours of attendance and 25 hours of autonomous work, also being worth two credits).

The final assessment involves making a synthesis that brings together all the data collected in the different phases of the diagnosis, in the course of the process itself and at the very end of the project, in order to arrive at a formulation that highlights the most prominent aspects.

The methodology used for the assessment of the project was a varied one, and included observation, participation in the work meetings, interviews, questionnaires and debates. This analysis took into account the contexts of the different interventions and the evidence obtained.

I run the risk of emphasising situations that are similar to the ones that were referred to in the assessment reports of the project's different editions ■ and in other texts dedicated to this theme or resulting from the research process.

The singular nature of this project lies in the fact that the artist plays a role in the classroom, helping the teacher to observe and build another form of teaching/learning, which arouses interest and commitment on the part of students and facilitates understanding of the curricular contents that are necessary for building and restructuring knowledge.

In fact, it must never be forgotten that motivation, in its broadest sense, lies at the very root of learning. Surprise and curiosity generate interest, bringing the affective component into the learning process. Motivation is, therefore, the cornerstone of the 10x10 project and it was this that made it possible to construct and successfully complete this project, in the knowledge that each person learns according to their own characteristics and that these derive from their experience, knowledge, thinking habits and ways of acting that are peculiar to them alone. It was fundamental to stimulate the interest of the teachers and students involved in the process through the contribution of artists from various areas, who enhanced the development of innovative methods and pedagogical tools.

The partnership between teachers and artists has made it possible to broaden horizons and create innovative intervention strategies. At the outset, the teachers make themselves available to participate in the project with the expectation of finding processes and mechanisms for establishing pedagogical differences. Among the many concerns repeatedly expressed by the teachers were the following questions:

- *How to motivate students and ensure that they are interested in the lessons? And in the subject? And in the school? And in knowledge?*
- *How best to attend to the different needs of each student?*
- *How should teaching and learning be organised?*
- *How to understand the difference between formal and informal teaching and learning processes?*
- *Does teaching exist without learning? Or are they part of the same process?*
- *Can one learn through mistakes?*

The artists try to create spaces for listening, for the exchange of ideas, reflection and creative, flexible and productive approaches that stimulate the desire to take risks and transform pedagogical practices. The initial involvement of the teachers increases as they become progressively more engaged in the activities that structure the artistic residency. In fact, their concerns gradually disappear as they commit themselves to the "new" training model.

In fact, the sharing of different ways of looking at the school reality – the inside perspective of the teacher already shaped by previous practice and knowledge, and the outside perspective of the artist, not conditioned by the natural limitations of the school and willing to engage in artistic experimentation – represents both a personal and a professional enrichment for the participants.

In the course of this intervention, the teachers have confirmed the usefulness of appropriating different artistic languages, which justify the use of other forms of expression and communication, besides verbal language. This gave rise to the urgent need to experiment with new methodologies and strategies in the school context. The power of the body and the senses to generate empathies and build innovative, interventive and critical knowledge has been recognised.

The act of thinking and reflecting takes on special relevance throughout these training processes, enabling teachers to review their ideas, intentions and representations and to discover new directions for their activities.

At the end, the teachers' expectations were greatly exceeded and the enthusiasm and desire to take risks was clearly visible, leading to a rethinking and change of some of their practices.

Reflecting and creating conditions that respect the principle of effectiveness require joint work, a careful planning of strategies and the design of varied and motivating resources, linked to the management of the teaching/learning process.

Changes of this type require time to become defined and consolidated, since they involve a process of appropriation. It is difficult to state that this procedure has effectively been introduced into the practices of the teachers involved in the project without being able to subsequently observe their way of behaving and acting in the classroom context. It would be important to resort to a process of data triangulation, using indicators of change, for us to reach more objective conclusions.

It is, however, possible to stress those aspects that stood out in the classroom context, and which, in the course of the period under observation, showed significant signs of transformation in learning – signs that were, in fact, noted in each of the four editions already undertaken.

— *The creation of complicity between the different members of the work team (in this case, teacher and artist) was fundamental for building up mutual trust. The incentive given by the artists was important, since it meant that the teachers were not afraid of taking risks and renewing their practices.*

— *The enhancement of an “affective” pedagogical relationship meant that all those intervening in the process related very well with one another and strengthened the bond between the teacher and the students, fostering the creation of a united and cooperative group/class. Also contributing to this situation was the opportunity that the students had to share their interests, affections and emotions.*

— *The combination of the efforts of teachers and artists played a crucial role, not only in the management of the curricula and working methods, but also in improving the atmosphere in the classroom, which could be seen in the way that this pair intervened and interacted with the students, treating them as unique individuals, with their own personal and social reality. Naturally, this atmosphere was influenced by the use of strategies and activities of an artistic nature, which invested in the students’ social, affective and creative process, stimulating self-confidence, respect for the other and the interactions of the group/class as a way of building knowledge.*

In the learning process, attention is fundamental, but it is known that this constantly changes its focus in the performance of a task or in the gathering of information. Seen from this perspective, micropedagogies were created and implemented that, by activating the body, broke the continuity and helped the students to regain their focus, refreshing their attention and concentration for the performance of the tasks in progress.

In this way, various positive effects were obtained, through a series of strategies that are identified and assessed below.

— *The classroom as a meeting space was turned into a place for challenges. Such challenges were increased when the activities that were undertaken spread beyond the physical limits of the room and were moved into various spaces around the school as well as outside it. At the same time, the different organisation of the tables and chairs inside the room influenced the interpersonal relationships and the patterns of communication.*

— *The implementation of rituals and moments for pause/relaxation in the course of classes was an added impetus for refreshing the students’ concentration. The rituals that were used consolidated the group/class’s affirmation of its identity and helped to create alternative community identities. When they were used to begin and end the lesson, these rituals situated the student in relation to the objectives that were being aimed for and made it possible for both the student and the teacher to engage in self-reflection about the learning processes that had taken place.*

— *The use of the body and the recourse to movement to explain and clarify scientific concepts, as well as the enhancement of the physical dimension and the senses as a pedagogical tool, favoured understanding, memorising, and the apprehension of some of the curricular contents and concepts of the school subjects that were involved in the project.*

— *When used as a pedagogical tool, games facilitated the acquisition of knowledge (making it possible to resort to alternative and varying solutions) and called for creative strategies for solving the problems detected. Without neglecting the results and the effectiveness of the learning processes, games “incited” the stu-*

dents to participate and become involved in the class. The games proposed both included and set in motion the learning of knowledge, making students more familiar with the vocabulary and scientific language. In this way, it was possible later to work on graphic and visual representations and written and oral skills.

— *The innovative proposals inspired by artistic practices interrupted routine strategies, favouring the creation of student interest and motivating them for the lessons and for more significant learning procedures.*

— *Group learning resulted from products that were built together, in accordance with the proposed task. This methodology, assessed by the students as having been stimulating and productive, contributed to the evolution of their capacities for acting autonomously, showing initiative and imagination, as was observed in the presentations of their works.*

It should be noted how, in part, it was the component of reflection, i.e. the work of analysis and discussion carried out among the teachers and the artists, which made it possible for the students to develop transversal competences and to create a guiding thread between the syllabuses of the various subjects and the strategies/activities that were tried out. In this sense, the performance of the artist, as a co-supervisor and encourager of the process, had strong implications for the project’s impact on the students and for changing the attitude of the teachers towards the teaching methods that they pursued in the classroom.

At the same time, I should also like to list the advantages that the project brought to the artists. First of all, the artists that were involved became more aware of the context of the school, both at the level of the pedagogical logic that was employed and the constraints that characterised the teachers’ activity, and at the level of the students’ interests, doubts and concerns and the learning methods that they preferred. This sudden immersion in the school environment also enabled the artists to better understand the curricular contents of the various school subjects and the way in which the study of scientific knowledge is structured.

The interlinking of didactics, contents and pedagogical resources involved a creative dialogue with the various artistic languages, and stimulated approaches that could help to build situations of consensus. Hence, it can be deduced that there will be a potential repercussion of these learning processes and the acquisition of knowledge on the creative process of each of the artists involved.

In fact, by implementing the improvement of the teaching practices, with the introduction of languages and tools from their creative areas, the artists were involved in the whole process of the project’s development, enhancing the dynamics of the group/class, the methods and creative strategies used, and helping to impart sense to the students’ learning and the teaching/learning processes employed by the teachers. We can therefore state that the artistic component is essential in projects with the characteristics of the 10×10 project, raising the quality of the teaching/learning process and increasing the students’ motivation to actively participate in the class.

**Guides by the
artists in the
10 × 10 project
Between the epic
and the vortex**

28 39

4th edition

**Catarina Lacerda
Actress and stage
director, Teatro do Frio**

Prologue

08:20 am, last row.

A smell of gel and shampoo.

Gently and violently,

we plunge into an epic.

Imagine Salome, Newton, Nelson Évora and Moses getting together, while still teenagers, and meeting in the same room. We don't yet know what their destiny will be or what feats they will achieve in the future.

Imagine that, in this room, they have to share their thoughts, their goals, their objectives and statistics. They share the same linguistic code, but, if we listen carefully, we will notice the differences in their experiences: how can we put Salome, the age-old legend of myths, in a dialogue with Nelson Évora, a top-class athlete from the 21st century?

You will be the hero of this story, Anivia, a winged being from the League of Legends, a phoenix from the land of ice, who from now on we will refer to as Hope.

Let us move on to October 2015. Class 10 A: Salome, Newton, Nelson and Moses are sitting at a table, all 14 years old.

Salome is beautiful and fierce.

Newton has an airship for his head, a tailor's dummy for his body.

Nelson, determined and silent, casts his determined gaze towards the horizon.

Moses, prophetic but not humble, lives as he talks, at the speed of light.

Hope has winged hands that she uses to weave the world's horizon.

She dies and is reborn each week.

Sometimes, surrounded by papers and with just a few hours of sleep, she will forget to love.

There will also be a notebook and a group of words inserted in a text box that refer to a safe harbour: the notebook of micropedagogies.

With this in mind, we follow the epic to the surface.

Consult

On this subject, consult the description of Anivia on the official website <http://gameinfo.na.leagueoflegends.com/en/game-info/champions/anivia>

Guide Catarina Lacerda

40 41

Day 1 October 2015

08:25.

The class is full.

Let's get on with the summary.

The room: small, white, hermetically sealed.

The light: abrupt and synthetic. It hurts.

Tables and chairs geometrically and symmetrically arranged.

09:00

$N_A = 6.022 \times 10^{23} \text{ mol}^{-1}$,
the Avogadro constant

I note down

→ We're short of oxygen for 50 lungs! The air really is conditioned.

More than the difficulty of keeping pace with the materials being presented, what is surprising is the incapacity to listen.

I note down

→ In five minutes, the same question was repeated by three different students, and, on all three occasions, the same teacher answered.

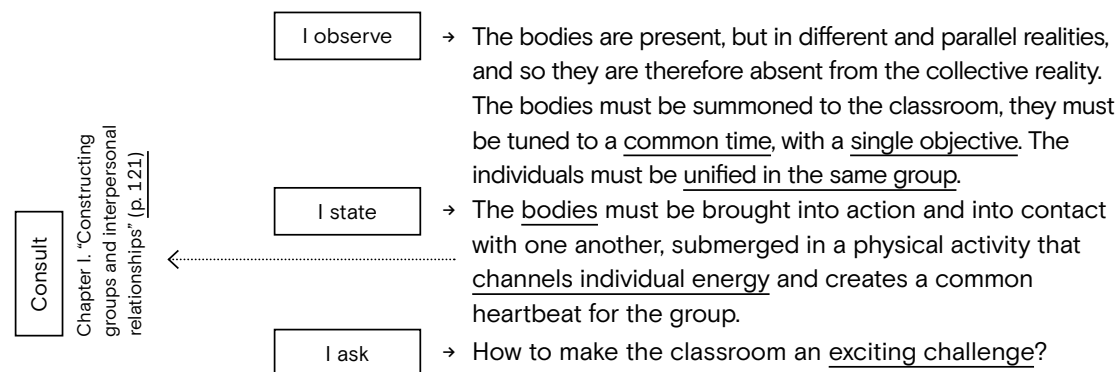
I challenge

→ How to transform each person's doubt into a challenge for everyone?

Words, rootless, echo – hollow and confused.

Active mouths in demobilised bodies, strident like loud speakers on the day of a festival.

There is no silence in the interest of listening to the other, there is a permanent noise, the wish to assert oneself.



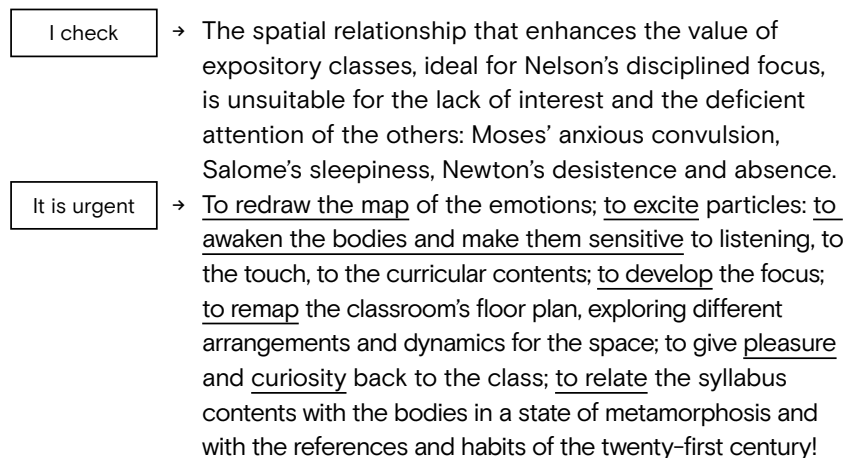
Salome, still feeling sleepy, dedicates herself to decorating the summary with floral ornaments.
"Don't bother me, son!"

Newton is inert, leaning against the wall. He looks ahead, into the landscape.

Nelson has had breakfast, he has his notebook and pen ready, watching Hope with determination.

Moses, like a spearhead, fires out quick ripostes and never plays in a team. He consistently appeals to Salome. The irritation of the others amuses him.

Hope has slept badly and has a long curricular plan. She is looking for accomplices amid the chaos. She wishes for silence 550 times per class. It's 9:10 am. There is no unity.



Micropedagogy

Counting and enunciating as a group (p. 144)

Initially we used this listening exercise without transforming the cartography of the room. Two side rows with 12 students, each of them sitting opposite a colleague, staring at each other. When the class began to master the rules of the game, we innovated:

1. They had to make themselves heard with their backs turned (vocal presence).
2. Instead of using numbers, they had to subject the enumeration to vocabulary that was associated with syllabus contents or to vocabulary associated with personal experiences.

It was through this exercise that we discovered Newton's profound passion for LOL (*League of Legends*) and Moses' love for basketball, which gave us clues for a student's work about the theme "Yesterday, my basketball: a rap", inspired by the micropedagogy "Series of writing exercises" (p. 162), and analogous vocabulary such as "spread the play!", developing the interpersonal relationship with the others in the classroom context. It was in this game that we established as a rule that the answer "I don't know" always implies a second answer, which necessarily has to be positive. Salome oscillates between stridence and "I don't know". For the theme "I know how to do this so well that I can even teach someone to...", and after a great deal of resistance, she came up with "paint myself". She was embarrassed about this. Perhaps one day she will understand that the great warriors have their mask of war...

Other discoveries arose during the course of this game, which was transformed into a "Ritual for beginning a session" (p. 137). In lesson 15, already with various themes explored, we built a bridge with the micropedagogy "Glossaries" (p. 159). For the theme of "Avogadro", the contents of Physics and Chemistry, Newton suggested the word "ponies". The class laughed at the provocation. Instead, Hope considered this to be a valid proposal, requesting that, just as in the dictionary, he should explain the meaning of the concept. After a group discussion, it was concluded that the sense was this: "PONIES: the place where thoughts go when the eyes are empty." We would return to this concept on several occasions.

On this subject, consult the micropedagogy "Ball game" (p. 140). Functioning in a similar way to the previous exercise, its implementation is made easier by the fact that the ball is an

Consult

In the class glossary, it says: "League of Legends: a game that occupies one's free time; virtual reality of the new super heroes". For more information, consult www.leagueoflegends.com.

- object that is very much present in the students' everyday life:
- The one who has the ball has the attention of the group and the capacity to act.
 - The one who has the ball chooses who they will pass it to.
 - Those who do not have to ball have to wait, attentively and expectantly, for someone to pass it to them.

Newton particularly likes this exercise. He is fascinated by the ball's trajectory and with it he understands the trajectory of the voice and the gaze. He feels that there is more silence during the game and that he doesn't have to make an effort to impose his presence.

Day 2

Evidence that guides us

First evidence:
The class is a false unit.
 It is a collection of small groups.

I note down

- Opportunities have to be created that place the students in contact with one another. These exercises are, above all, intended to stimulate the joint action of the group, through clear and shared rules, with the hint of a pleasurable challenge. Through repetition and appropriation, we must innovate, creating new rules and relationships, keeping the game alive and challenging, and combining it with vocabulary from the school subject. A fairly large space will be needed to undertake the initial part of the exercises.

Micropedagogy

Stop in movement (p. 125)

Once the basic mechanisms had been fully apprehended, we created new rules, upsetting the mechanisation of the bodies and disturbing the minds with:

Use of music

1. When the music starts, they dance; when the music stops, they stop.
2. Reverse! When the music starts, they stop; when the music stops, they dance.
3. The class is divided into two groups, A and B. Group A functions with Rule Number 1 while Group B functions with Rule Number 2!
4. Reverse! Groups and action/rule.

Putting the "spin" concept into operation (contents of Physics and Chemistry)

- We gave the group direct instructions for action: "Move forwards; Move backwards; Jump; Lie down; Sit down; Stand up." When these instructions were operational, we introduced the "spin" concept; or, in other words, they react to the instruction "Move forwards" with the reverse order "Move backwards"; and, when they hear the order "Sit down", they stand up.
- Forming two groups (A and B), we gave direct instructions to Group A, while Group B had to do the "spin" (or reverse) of Group A.
- After some time, the dynamic was reversed.

Second evidence:
Teacher and student don't know the essential mechanisms of speaking.
 "Between us and words, there's molten metal." The communication is not processed, except in the case of a small number of students, who can find a correspondence between their own personal goals and the curricular goals.

I note down

- We need to explain and practise speaking: it is an essential interdisciplinary tool in the classroom context. This implies an awareness of bodies being present: or, in other words, the relationship with the space and with the other is profound and essential in understanding what one wishes to communicate. Just like thoughts, the body needs to be clear in its expression, aware, systematised. What matters is how it is said.

Third evidence: There is no challenge or mystery in learning.

There is no motivation, there is obligation. There is no curiosity, there is habit. There is no body to body in the challenge.

I note down | I underline | I highlight

→ How to breathe will and interest into scattered and absent bodies? How to motivate students and teachers for the learning processes?



From the Latin *movere*: to displace, to cause to change place.

Fourth evidence: The classroom is a space that is highly limited in terms of physical mobility and oxygenation.

→ Other spaces in the school must be found where the group can explore other approaches. Different cartographies must also be explored inside the classroom, taking into account the characteristics of the space and the available materials, and making it possible to introduce other dynamics for using the bodies in the learning process.

Fifth evidence: I don't know the universe of the students.

I note down

→ Why are these people here? Is it because of the right to "compulsory education"? Is it an obligation or a right?
→ What music does Salome listen to? What motivates Newton? What moves or upsets Nelson?

Sixth evidence: There will always be homework for the teacher.

→ How can we put Salome, the age-old legend of myths, in a dialogue with Nelson Évora, a top-class athlete from the twenty-first century?
→ How can we transform poetry and covalent bonds into a shared challenge?

Reality must have elements of fiction and will be presented under the form of an epic.

Day 5 Hope, at home, redesigns the habitat/classroom

Surrounded by blank sheets of paper, a pencil, a rubber and a pen, Hope notes down dimensions and geometrical forms. She inventories 24 tables and 24 chairs. As if she were working with a "Tetris" puzzle, she seeks possible combinations for different arrangements of the classroom. She was never a very good student at visual arts. What has proved useful is the training that she acquired when remodelling her kitchen, two years ago, in the planning section of IKEA.

Accompanying her in this task is the album *Play*, by Moby. Salome referred to it in the vocabulary she associated with "I like to hear". YouTube did the rest. She particularly likes the track "Run on". Hope finds the map that will be of use to her. She studies it keenly and nimbly. It enthrals her, gets inside her.

I note down

→ We need to simplify the organisation of the space and to make it more effective, to *transform* and *incorporate* the individual effort into an exciting group task.
→ With the repetition and greater flexibility of the choreography, it might also fulfil the functions of:
Opening ritual;
Physical activation;
Harmonising the group.

I check

→ This floor plan makes it possible, in the course of 80 minutes, to form different compositions of the classroom and the students, without losing concentration or wasting time. It makes it possible to combine group exercises, which work on active listening, focus, the sense of belonging to a group, the creation of a common vocabulary, with exercises in small groups that encourage autonomous interpersonal work.

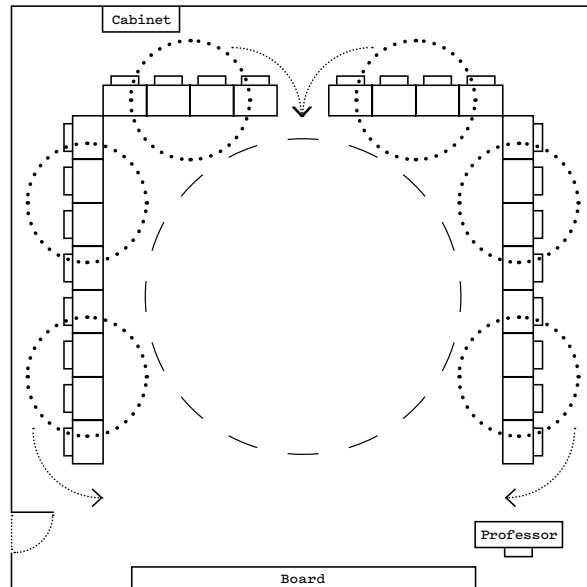
Consult
"Choreography for a U-shaped room"
(p. 136)

○ A spacious area that allows for:

1. The realisation of group exercises and “corporisations”.

2. Presentations that practise oral skills: the bodies of the students and the teacher are exercised in the relationship with the space and other bodies, bringing active presences into operation – everyone is involved, everyone matters, everyone takes responsibility for their body, voice and thought.

Consult
“Corporisations”
(p.173)



Micro areas that make it possible to:

○ Organise themselves into groups of between two and six members, autonomously, face to face, making use of tables and chairs. The teacher has a large and spacious area in which to move around, as do the students, should mobility be necessary for the performance of tasks.

Day 6 Cartographies and educational dynamics

Hope knows that the challenge that she proposes to introduce will cause a stir. The resistance to change is learned from a very early age.

08:20.

She begins at the beginning: in silence, she observes the bodies in the space. As a result of her work the night before, the classroom looks like an IKEA drawing.

I note down

→ There is a palpable geometry in the relationship of the bodies with the space.

08:25.

Salome is wild, irritated with other geographies. Newton holds his head, which gives way to gravity. Nelson, his muscles impatient, awaits the summary. Moses arrives, feeling particularly energetic and ready for action.

08:30.

Hope announces that there will be no summary. Nelson feels that he has been personally attacked in his routine as a top-class athlete. Hope smiles, she has a challenge and is nervous about her own expectations. The following description corresponds to three two-hour blocks gathered together in three main steps.

Step 1:

Activate body, mind and a musical sense

1a) Stretching with a yawn

1b) Rhythmic exercises

Objective:

To activate the skills necessary for the performance of a choreography,

namely synchronising activities and planning their phases in accordance with the actions of the other (motor coordination, active listening and focus). Rhythmic exercises are proposed in a format that is an imitation of gestures, harmonising the movements of the different members of the class and stimulating another way of looking at the classroom furniture.

I state

→ On hearing the order “Silently” or “Without dragging tables and chairs”, the students barely react. However, with the musical perspective, it is requested that the choreography should take place “without any sound proposals”: paying attention to contact with the objects substantially reduces the noise. Silence seems possible!

Micropedagogy

Game of imitating gestures/movements (p. 126)

In a variation of this micropedagogy, we establish a rhythmic sequence with the clapping of hands, which we refer to as the “phrase”. Hope proposes the rhythmic phrase that the students are supposed to repeat. As their understanding and appropriation of the necessary mechanisms gradually progresses, several variations are possible, making the rhythmic exploration more complex and channelling it into other contents:

- Anyone can make a proposal.
- Inclusion of sounds produced in contact with school objects (table, chair, pencil, sheet of paper).
- Inclusion of vocal sounds (breathing, consonants and vowels).
- Sound exploration of the vocal dynamics (speed, fluidity and volume).
- Sound treatment of “unpronounceable” words (“prestidigitator”, “maesperantototemic”).

On this subject, consult the micropedagogies “Game of the sound conductor” and “Word volcano” (p. 146)

The class is standing, Hope is at the front. Hope proposes the first rhythmic phrase. Salome: “Oh, Miss, really?!” laughter. Hope is determined and repeats the phrase. Nelson disapproves. Moses answers. Hope congratulates Moses for his excellent example, and invites everyone, especially Nelson, to participate. There then follow four rhythmic sequences. Moses is excited and comments on how easy the proposals are. Hope challenges him to propose a phrase for the group, requesting precision and clarity in the proposal and adding a rule: now with clapping and including the sound of the chair as an object. Moses takes command: he claps twice, puts his feet on the chair, developing his musical awareness of the gesture. The class become excited with his madness. They follow him. Newton is hardly involved at all. Hope encourages him with greater precision, while Moses activates the class. Hope changes the focus, changes the person proposing the phrase. Newton will be the leader with a new rule: no clapping and using the sounds of the table and chair as objects. Salome is jumping up and down, saying that she wants to propose sound dynamics based on the word “pony”. She will be the next one. The atmosphere has been created for the introduction of STEP 2: PRACTISING the choreography.

I state

→ Today I felt the presence of Newton in the class! We must develop this sound sensitivity in a circle, where each member of the class, in their own time, expounds their own individual proposal, listening to it repeated, in unison, by everyone, without stopping and with no commentaries. Invisibly, working on the sensitivity to the sound of the words, improving articulation and vocal projection.

Step 2: Practising the choreography

Hope has studied the choreography in great depth.

Expectant and determined, she has a mental scheme that will support her in her oral communication.

I remember

1. Simple and synthetic phasing: short phrases with the stress on verbs of action.
2. Concise and pertinent rules: teams, tasks and duration.
3. In the oral explanation:
 - She relates VERBAL ENUNCIATION with CORPORAL ENUNCIATION: strategically, she is positioned in the centre, in full view of everyone. She raises her arm, with the fingers of her hand indicating the number of the steps and tasks!
 - The actions are performed/exemplified together with the enunciation, clarifying what she is saying with the bodies of the students. Energy is put into the performance, and not into the justification.
4. Don't be afraid of repetition: when the action becomes uncoordinated or hesitant, it is suspended. They go back, repeat, and further explanations are given.
5. When all the steps are clear and known, perform one to three passages from the complete choreographic sequence.

Step 3: BENEFITING from the dynamics of the U-shaped space

I observe

- Just as in a sport or a cooking recipe, swiftness and agility come from repeated practice. A lesson can and should be a combination of various moments: expository and experiential; listening and chaos; action and reaction, bearing in mind that each student contains in themselves a referential universe that needs to be aroused so that learning can take place.
- An effective lesson for Nelson, a top-class athlete, who sees the curricular goals in his personal targets. But where Newton, Salome and Moses see "ponies", it is a negation of these three existences, so it is a des(ex)istence and a despair.
- Just like the manual, the experiential space is essential for learning. We must listen to it to be able to have it as an ally!

3a) Contents of Portuguese: Speaking, Troubadour poetry and Intertextuality

With the aim of deepening sensitivity to the contents of the programme, Hope draws up and implements the following plan, linking the spatial organisation of the group(s) to the micropedagogies.



I Rhythmic circle of consonants and words

Duration: 10 mins

Constitution: 1 group of 25 people

Contents: Speaking gymnasium



II Phonetic notation

Duration: 30 mins

Constitution: 6 groups of 4 people + 1 tutor

Contents: Songs of mockery and vilification; Intertextuality; Speaking; Phonological processes



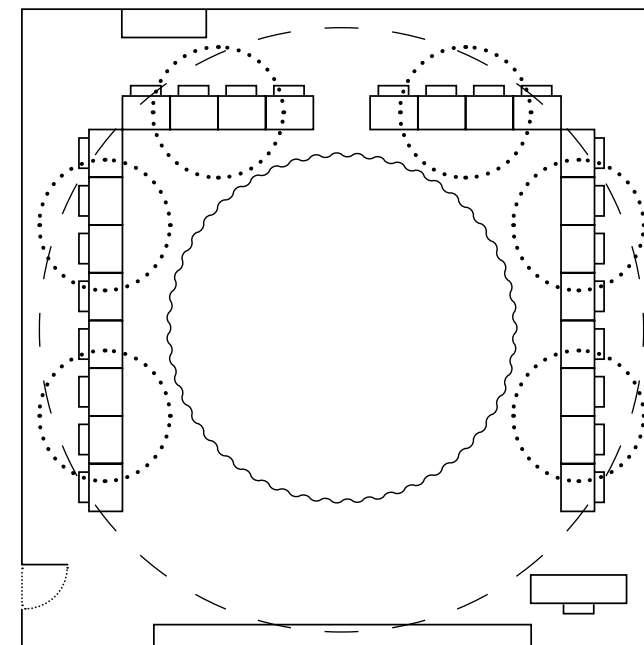
III "Medievalisation" of twentieth-century poetry

Duration: 30 mins

Constitution: 6 groups of 4 people + 1 tutor

Contents: Intertextuality; Speaking and the body in space; Phonological processes

Consult
"Phonetic notation"
(p. 166)



Medievalisations (p. 166)

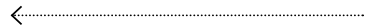
Salome and Newton's group chose to place the class, now transformed into the audience, facing the board. They began their presentation with their backs turned to the audience, as a listening exercise. They wanted to surprise the listeners. Moses' group used the top of the cupboard to begin their presentation. They wanted the audience to circulate freely, able to see and hear everything easily, communicating effectively to "the masses". They lacked a better articulation! They were also excited and surprised with the proposal that seemed to endanger Moses' physical integrity and the rules of conduct for the use of the furniture. Nelson's group joined two tables together in the centre of the spacious area, creating a mini-stage where the group members positioned themselves. The audience were intended to stand around this stage. They sought to be effective: they chose to concentrate their time and energy on achieving "medievalisations" and not on adapting their presentation to the space.

At the end, we concluded:

Risk and surprise arouse curiosity, and curiosity mobilises the body and stimulates the mind. When the bodies are not mobilised, the effectiveness is relative. The ideal presentation would be a combination of Nelson's effectiveness, Salome's surprise and Moses' risk-taking.

On the subject of surprise as a path to effectiveness, read: "*Ridikulus articulatis*" (p. 152)

First line of "Triumphal Ode", by Álvaro de Campos.



- I note down → The class was a succession of challenges! A gymnasium for my speaking. There was chaos and collaborative work, a determination to surprise, an awareness of the other, a desire to communicate!
- I question → And what if we were to hold a class with another kind of light, with lamps scattered around the tables, on the cupboard, on the windowsill, toasting "By the harsh light of the factory's huge electric lamps / I write in a fever".
- I state → Pleasure is contagious and curiosity burns like a woodworm and a handful of cherries...

3b) Contents of Physics and Chemistry: Electronic configuration of lithium

Thursday, there were difficulties in the Physics and Chemistry class. Salome noted Hope's ability to speak Chinese. Moses compared Newton to an invertebrate animal and went to get some fresh air. Newton remained with his gaze focused on something outside the window. Hope, defeated, got up to have a cup of coffee. She looks at the sky. It's 5 pm and a flock of birds are flying expertly in a geometrical triangle. Hope laughs and visualises a bold strategy.

It's 11:45 pm.

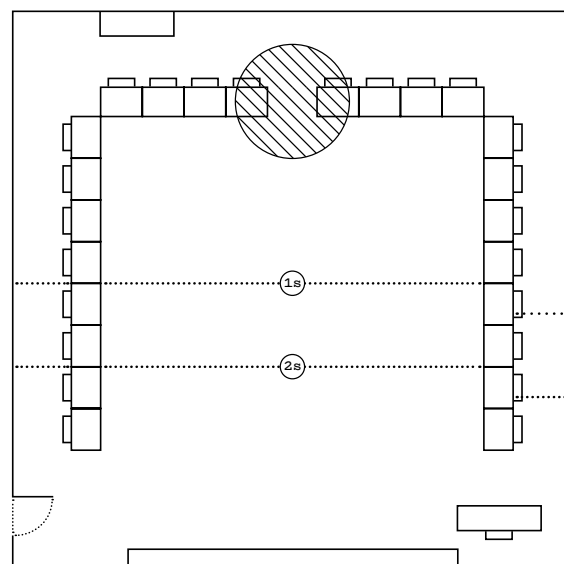
Hope plunges into her note book. Inspired by the flight of the birds she saw in the evening, with her pencil and paper ready, she flies over the lino floor of room 001, in block C. She draws lines, creating parallels between her abstract thought and the physical reality she has experienced. On Monday, Barbara, Moses, Newton and Nelson will be electrons.

- Step 1:
Stretching
Duration: 2 mins
- Step 2:
Activating and practising the "spin" concept
Duration: 5 mins
- Step 3:
Choreography
Duration: 33 secs
- Step 4:
Spatialising the electronic configuration of lithium
Duration: 20 mins
- Step 5:
Synthesising
Seated in a U-shape, the students open their manuals. They relate their own experiences and observations with the contents and pictures in the manual.
Duration: 10 mins

Micropedagogy

Stop in movement (p. 125), *spin* variation.

Taking advantage of the room's normal configuration, with two students per table, when Hope gives the order to "Climb on the table", the students on the right (A) climb onto the table, while the students on the left (B), reacting to the *spin* variation, place themselves under the table. It is interesting to develop vocabulary which, in a normal formation, places them in a challenging action and pose, and therefore activates them.



Micropedagogy

Making the invisible visible (p. 174)

In applying the premises of this micropedagogy, Hope creates an adaptation to the contents that are to be taught and tries out the EXPLAN/ACTION of the proposal.

Objective, rules and spatialisation

1. To represent in the space the electronic configuration of the molecule of lithium, with three electrons, in accordance with the scheme:
 - Each student will be an electron.
 - Nucleus and orbitals will be represented in the space.
 - There will be a "coach": an active voice that names and guides the electrons and directs the electronic distribution.

2. Hope is the "coach". The area next to the cupboard is the nucleus; two side chairs are placed in the central area, representing the 1s and 2s orbitals.
 - Salome is the nucleus. She places herself in position.
 - Newton and Nelson, now the electrons, begin by occupying the 1s orbital, with less energy. Nelson sits down and Newton remains standing, relating to one another in the reverse "spin" manner.
 - There is one electron left over, Moses, the valence electron, who occupied the 2s orbital.
3. Observing the bodies in the space and their relationships with one another, a correspondence is established between "the rules of the game" and the rules of the electronic configuration.
4. Once the operational mechanisms have been apprehended, they move on to the spatial organisation of other more complex chemical elements. The students will also be the "coach"; Hope monitors them.

It is 02:00 am on a Saturday.

Hope considers that she has just heard a bizarre insert on a radio programme delivered in a serious and measured voice:

Listening and giving room to each participant in the educational process, making each person responsible for their participatory voice, requires perseverance, complicity and time; the ability to withstand frustration, pleasure in overcoming the permanent challenge.

Enthusiasm moves people.

Pleasure animates and is contagious.

Life is not a fairy tale, but it will be an epic.

Hope laughs, in a vortex of tiredness, joy and hallucination.

She closes her notebook and then closes the bedroom door.

On Monday, she will be back again, with a trump up her sleeve, reborn.

Newton, Salome, Nelson and Moses are perhaps asleep.

Perhaps not.

Without knowing it, they will be waiting for her when a new week dawns, with their eyes fixed on the horizon.

**Guides by the
artists in the
10 × 10 project
Discovering
by doing**

58 59

1st edition

Maria Gil
**Actress and stage
director, Teatro
do Silêncio**

On top of my table, I have a pile of notebooks in various shapes and sizes, the largest of which is a black notebook with a label on the cover, on which can be read, in blue ink: “10×10 Project, 1st edition, Maria Bárçia/Maria Gil, 2012”. I begin by flicking through the large black notebook and immediately find, on the very first pages, marked with the date 27 September 2012, a record of the initial conversation that I had with the students, who, among many other things, told me:

**Learning serves for us to get a job and have a future.
If school weren't compulsory, I'd still come anyway; I enjoy the social contact, I don't like the lessons.
I don't understand why I have to have Portuguese lessons; I already know how to read and write.**

I remember having enjoyed the open and direct way that the students talked to me. I remember them having asked me to explain to them more clearly what exactly this “10×10 Project” was all about and how the Saturday outings that we were planning would operate; I remember them telling me that they would “still have to think about it”. I remember their curiosity about my profession, and them asking me questions about what it was like to be an actress. And I also remember asking them what things would be like if they were the ones to decide what they wanted to study and the way they would like to do it; and the answer was:

**Less material to learn.
More practical lessons.**

And then I remember watching Maria Bárçia giving her lesson, in a mixture of strangeness (despite everything, I was an outside element in that class) and familiarity, because she was in a place that she already knew, a feeling that will always remain etched in our memory. In the big black notebook, I wrote: “There's a homely feeling in the classroom.” Now, looking back at the notebooks, everything seems to make sense and fit together perfectly: a Portuguese teacher paired with a theatre person, in a classical connection between text and action, students who don't like reading or writing, and a teacher who wants to set the students writing in collaboration with an actress who writes the texts for her own shows. The truth is that none of this was obvious at the time, neither to me, nor to the teacher Maria Bárçia, nor even to the students. On the one hand, we were starting to implement a project from scratch, there were no public lessons or artist-teacher pairs to be used as a reference, there was no systematised knowledge, everything was uncharted territory. Although this was an educational project that sought to act on a small (micro) scale and to operate in the classroom context, it still presented itself as something ambitious, since it was designed to combine artistic and pedagogical practices in an innovative fashion and was looking to assess the results of this crossover through (among other things) the holding of public classes inside and outside the school. There

● This content no longer exists.

was also a sense of danger, a feeling that we were taking risks, not only because the project involved real people (teachers, students, parents and guardians, school staff, artists, a public audience), in a real context (school, academic year, classes) and in an apparently short space of time for the huge amount of work that one sensed was involved, but, above all, because we didn't have the slightest idea what we were doing. At this point, I held tightly to Pablo Picasso's famous quote, which I jotted down in the black notebook as if it were my guiding compass: “If you know exactly what you're doing, what's the point of doing it?”

If we close our eyes and try to remember a moment in our childhood or adolescence when we learned something, it's highly likely that this fragment which floats somewhere in our hippocampus is associated with a positive feeling, involving other people, adults or children. By way of an exercise, we may even explore that memory and try to identify the emotions that are linked to the event; we can try to say what we learned from that experience and why there is a positive feeling that we associate with it. Although we know that things can be learned negatively – after all, the history of education is full of such examples, and probably our own memory too – one of the effects of associating positive moments with learning is wishing to go back and repeat that experience, or else not wanting it to end, just as, when we were children, we used to fight against sleep so that we could stay awake just a little bit longer, because it was so good to listen to that story, to play that game, or just simply to be playing by oneself. In this way, creating motivating, inspirational or fun-filled experiences was one of the aims of our working sessions in the 10×10 Project, and, in the more specific case of my partnership with the teacher Maria Bárçia, creating positive experiences associated with the practice of reading and writing. Our great challenge was to transform the idea that “writing is boring” into the idea that it “may even be fun”.

How to get students writing?

How to get students writing in a way that isn't painful for them, and doesn't feel like a sacrifice?

After we had identified our problem, or the question that we wanted to focus on in the course of the twelve working sessions that were planned, in which I would accompany the Portuguese lessons given by the teacher Maria Bárçia, proposing, together with her, a series of dynamics and exercises based on my artistic practice, we decided to choose the theme for our work, a content for the subject of Portuguese as taught to students in the tenth year of the course of Socioeconomic Sciences: autobiographical texts ●. Based on this content, we planned a sequence of exercises distributed over the twelve working sessions. The way in which we made this choice was fairly intuitive and involved a sensitivity that was

shared between teacher and artist. Basically, I presented a booklet of exercises related with my autobiographical practice and, as I was explaining how these exercises operated, the teacher Maria Barcia chose those that seemed to be the most appropriate for the class and for the context in which we were going to work, taking into account, among other factors, the possibility of doing them inside a classroom with the material and time that were available. On other occasions, we chose to adapt exercises proposed by other artists that had been produced during the residency with artists and teachers and which had set the tone for the implementation of the project, and we also invented our own exercises, based on predefined question papers included in the programme for the subject of Portuguese. As far as the practical approach was concerned, the class had two lessons per week lasting ninety minutes each. We established that one of these lessons would be given by the teacher (or, in other words, it would be a classical lesson), and the other would be a practical lesson, given by the pair of artist and teacher together. One important factor that was immediately agreed upon was that the so-called “classical” lessons would be planned to operate in conjunction with the so-called “practical” lessons; in other words, if we were working on a text about memory in the lesson given in the classical format, then, in the practical lesson, we would be writing about our particular memories and reading those memories out loud. We always sought to achieve a coherence, a meaning, a dramaturgical link between classical lessons and practical lessons, as well as a coherence in the preparation and delivery of each practical lesson which had to take into account the pre-established combination of different aspects: chosen content (autobiographical texts), proposed exercises (based on artistic practices) and the problem to be solved (getting the students to read and write). We can state that one of the first artistic/pedagogical crossovers, or the first micropedagogy that we used, was to apply the concept of dramaturgy to the way in which we designed, structured and thought about a lesson, or a series of lessons.

We can define dramaturgy as a process of creating or causing to emerge a line of meaning that gives coherence to a whole. In the theatre context, it relates to a performance; in this case, it relates to a lesson or a series of lessons.

It should be noted that this coherent whole was not constructed through the simple alignment of the exercises, nor through the simple interlinking of the classical lesson and the practical lesson, but it gradually emerged throughout the course of a process developed by the artist-teacher pair, who worked side by side, as well as in collaboration with students from the class and with Judith Pereira, who monitored the project. Together they constructed this whole, producing and conferring meaning on what was being done, since meaning is not something that is stable, fixed or predetermined. Or, in other words, although there was planning, a methodological

● The phrase “post-dramatic theatre” was formulated by the German theatre critic and teacher Hans-Thies Lehmann, in his work *Postdramatisches theater*, published in 1999.

■ Fischer-Lichte, E. (2008). *The transformative power of performance: A new aesthetics*. New York: Routledge.

approach and predefined contents, there was always the idea that we were engaged in a process, that everything that we were proposing to do would be constantly reconfigured and reshaped as we moved forwards, which obliged us to develop an active form of listening and to be permanently available at all times.

This concept of dramaturgy, which I shall refer to as *discovering how to do things* or *emerging dramaturgy*, can be useful for artists and teachers whose work involves a large dose of experimentation and discovery, and was particularly important for my partnership with the teacher Maria Barcia, because the proposals that I presented were not mere recipes intended to be applied indiscriminately. On the contrary, the very exercises themselves emerged from an artistic practice with a specific context, included within a particular tradition. Ignoring this fact and applying the exercises outside the context may simply not work or else take us in the opposite direction to the one that we wanted to follow. Thus, it was very important to think together about whether the proposed exercises were appropriate to what we effectively wished to do, to the students’ needs and to the context in which we were operating: ninety-minute sessions inside a classroom.

The concept of dramaturgy that I use here belongs to a post-dramatic context ●, in which theatrical writing does not presuppose the drama; in fact, as an artist, I work in the field of *performance*, and here I understand *performance* in the way that Erika Fischer-Lichte defines it, as an event whose course cannot be completely planned or predicted, but is instead subject to the laws of creation, since the elements that emerge from it derive from the interactions between the performers and between these and the audience ■. Following this logic, both a performance and a lesson are subject to the contingencies of the present moment. This means that an exercise that worked well in one particular lesson may not work in another one, which may be due to countless factors, among others: different students, the degree of tiredness felt by the teacher, the time of the lesson, the social and political context in which we are living at that time. By framing the exercises within an emerging dramaturgy, we are therefore more aware and alert to the present moment, working together on constructing the meaning of what we are doing, which involves a great deal of commitment on the part of all those involved in the process of the lesson (artist, teacher and student), who see themselves as participants in the process, and therefore as more active, more *empowered* and more responsible.

Thus, our working methodology was initially divided into four phases: identifying the problem; choosing the field of work; creating a series of exercises inspired upon artistic practices; establishing a structural plan to be implemented over the course of the twelve working sessions, knowing that this plan would vary according to the response given by the students to our proposals, and that this response would be decisive for the development of the project. We were on the alert!

Autobiography

As an actress and a stage director, my performances are always autobiographical, or they invariably have an autobiographical premise. For example: I can go and live in a foreign city for four months and build up a show or a performance based on that experience; I can ask people who are far away to write me a letter, which I decide to open only during the course of a performance, in front of an audience; I can create a show from a diary that mixes together childhood memories and poems by an Indian poet; I can interview Portuguese politicians and ex-lovers of mine to create a show based on this material. This means that, on stage, I explicitly use material that I have drawn from my own life. Furthermore, when I embark on the creation of a show, I do not have a previously written script, but I gradually define the show during its own process of creation. My artistic practice therefore involves a large amount of improvisation, for which I design and adapt exercises, tasks, offshoots, which can have fairly fixed rules or just be a vague and imprecise collection of beginnings; in any case, at the end, there is always an original text. This leads to my having developed a practice of recording ideas, of spontaneous and fragmentary writing, and with a large amount of speaking involved; more than sharing a list of exercises, it was this experience that I could bring to the project. This sharing showed itself to be fundamental, because the teacher Maria Bárbara wasn't interested in having the students begin by writing large and carefully edited texts based on autobiographical contents; on the contrary, our proposal was that the students should write short texts, but with great frequency, until writing became a habit, a routine. Finally, we can say that this was our second strategy, or micropedagogy: to undertake a series of exercises of rapid writing in order to unblock the "I can't do it", and so that, through the accumulation of their written production, the students should begin to feel more and more capable.

The history of literature is full of episodes of writers who suffered from the well-known "anguish of the blank page", and, lost in the shelves of any bookshop, we will certainly find lots of manuals that are designed to help us begin to write, to overcome fear, or to find our own "way of writing", our own "style" or "voice"; in other words, not knowing how to start writing, nor even what to write about, is a state of anxiety that we've all been through. Here, our third strategy, or micropedagogy, was to use the autobiographical contents as a springboard for beginning to write. In reply to the students' question "and what do we write about?", we answered "About what you know best, about yourselves, about your experiences." Autobiographical writing therefore enabled us to unblock one of the most common obstacles to written production: not knowing where to start. The students, who were somewhat amazed, threw the question back at us:

● Available on the blog of the Calouste Gulbenkian's "Descobrir" Programme are some scripts of the exercises developed in detail. You can consult these at: <http://descobrirblog.gulbenkian.pt/escrever-sobre-mim>.

Can I write about myself?

The protocol that we established for the realisation of each exercise quickly took root in the class procedure: after we had provided the question paper and indicated the time for each exercise (which varied according to its nature, although there was always a pre-defined time that, while creating pressure, nonetheless imposed limits and gave the writing process a structure), there came the moment of reading aloud what they had written to the rest of the class, but only for those students who wished to do so. Suggesting "Whoever wants to can read out what they've written" and respecting this dynamic was decisive in ensuring that the students gained self-confidence and didn't feel as if they were being judged, and for the shyest among them to gradually become able to share their texts. Writing, even when it is non-autobiographical, is an intimate process; understanding this fact is crucial in ensuring that, especially among adolescents, the students don't feel exposed or judged in any way. When the students understood that we were adhering to this dynamic, that it wasn't any form of demagoguery on our part, they felt more relaxed about sharing their texts by reading them out loud, all in their own good time. Often, when they couldn't manage to do this, we suggested that it should be a classmate to do it for them, in a new dynamic of mutual cooperation. This was where a fourth strategy, or micropedagogy, was to be found, arising from the wish to take these questions and the difficulties felt by the students seriously, with the aim of giving them greater value, and with it increased responsibility, creating a comfort zone and a sense of security, while, at the same time, challenging them to overcome these same difficulties and limitations.

Here, now, are some examples of writing exercises that we did with the students: ●

1. Invent another Christian name for yourself.
2. Write about a memory based on five distinct smells: an old perfume, the peppermint plant, cedar oil, resinous incense, nail varnish.
3. Create a mini-album using five childhood photographs and then use this mini-album to put together an installation, also including among your props child's clothes and a table lamp.
4. Write a biography about yourself using the personal pronoun in the third person singular "he/she".
5. Carry out an interview with yourself.
6. Invent an alter ego and come to the class as that alter ego, walk around the school as your alter ego.
7. Use a pocket mirror to write a self-portrait in a poetic form.
8. Ask a friend/relative to write you a letter, open the letter and read it aloud to the class.

One of the criticisms most frequently levelled at autobiographical writing has to do with its solipsistic nature, encouraging a display of

the self-centredness and narcissism that this genre encapsulates. However, it is also quite common for the same genre to be praised, the argument being that is perhaps the one genre in which the reader feels closest to the writer. In fact, the universal nature of autobiographical writing, allows us to state, just like Montaigne, that “chaque homme porte la forme entière de l’humaine condition”

● This aspect of autobiographical writing was not unimportant to us: not to me, not to the teacher Maria Bárcia, nor even to the students. In fact, it enabled us to explore a series of important questions in the learning process, not just those related with the contents of the school programme, and as a starting point for reading and writing, but also with the individual experience itself, in its relationship with the other. Or, in other words, I am referring to what is called creating a group, creating a class, or, in the school jargon, group work. But what is “group work”?

How does one create a class?

At first, our attention was focused on individual exercises, on getting each student in the class to write, which may seem to be contradictory, because the tendency of teachers, especially when they have a new class in which the students don’t know each other or have difficulty working as a group, is to get them to do group work – as if that would solve the problem... We know, even from our own experience as students, or at the professional level, that group work often boils down to the distribution of tasks in which there is always one person who ends up performing several tasks at once, while the others totally abdicate all responsibility; furthermore, with group work being limited to this allocation of separate tasks, there is little room for discussion, or dialogue or for thinking together and for building up knowledge as part of a collaborative process. This was where our fifth strategy, or micropedagogy, came into play, which involved first of all an investment in individual autobiographical writing and then, only at the end, in the last two working sessions, did we begin to work in small groups and to produce written texts produced by several hands working together. Once again, the questions raised through the production of autobiographical texts, such as the creation of empathy, intersubjectivity, individual memory versus collective memory, the relationship with subjective truth and factual truth, the dichotomy of fact/fiction, personal writing as a springboard for fiction, the possibility and limits of reconstructing identity, the awareness of the various social roles that we play, the relationship between the self and the other, in their similarity and difference, as well as the emotional impact of personal writing, were all important in ensuring that each student had their own safe space. Mediated by the artist-teacher pair and authorised by the students themselves, who chose what they wrote and decided when they would read it to the class, a space was created in which the students could have their own voice, in order to better understand themselves and to get to know the other; these are to be considered

the fundamental bases for creating any collective group. Furthermore, the artistic practices inspired by the theatrical games include play as a decisive element for creating a group and for training skills that involve everything that is collective, because theatre places its emphasis on action and expression, and on the involvement of the self through discovering things by doing them, rather than seeking refuge in a passive and uncritical attitude. Through the dynamics of theatre, the students can concentrate their attention on the relationship between reflection and action, between the abstract and the concrete, learning that this attention completely envelops their entire body: physically, emotionally and mentally.

Thinking of the lesson as a ritual

The origins of theatre are linked to ritual, as a religious ceremony that celebrated agrarian and fertility rites. In Ancient Greece, tragedy itself was due to the shifting of the dithyrambic worship of the god Dionysius from the heart of the forest to the urban space, where the theatre began to be situated, which, etymologically, means “the place from where one can see”. In any ritual, there is a cut in common time that “transports” its participants to a different, sacred space, proposing a celebration from which we emerge transformed. The ritual operates at the symbolic level. Thus, thinking about the lesson as a ritual was our sixth strategy, or micropedagogy, in order to provide an answer to the already mentioned problem of the students not knowing each other, either because they came from different schools or because they were simply reluctant to work with one another. A ritual is something that is repeated and is always the same, because it obeys the same structure; thus, our ritual consisted in beginning each lesson sitting or standing in a circle, and in the artist-teacher pair explaining our proposal for each working session, revealing what we were going to do and the objectives of the exercises that we wanted to propose to the class. Or, in other words, it was a question of our explaining, in a highly concrete way, the reason why we thought that those exercises might be important, which enabled the students to be more relaxed. In this way, they did not expend any unnecessary energy trying to understand what they were doing, they could understand the motivations behind our proposals and they were mentally prepared for what they had to do – since, as adolescents, they don’t like to “look foolish”. Removing the element of surprise led to the students being prepared to choose how they wanted to present themselves to the others, thus reducing their nervousness and anxiety. As a consequence, the students began to respect our proposals more, generating a feeling of confidence and trust that was important both for the artist-teacher pair and for the class as a whole. We understood that the students were more relaxed and cooperative when they knew what they were going to do and what the aims of our proposals were, especially because these were now shared collectively.

In this ritual that we developed, there was also a brief moment when the students arrived, which was intended to produce an effect of recognition and mental preparation for the tasks ahead:

“Hello! Good morning! Here we are, today we will be working in this direction. How do you feel about that? Any questions? Does anyone want to share any thoughts with us before we start the lesson?”

In the same way that it is important to start, it is also important to end, to give a meaning to what has been experienced. In the logic of this ritual, the lesson ended ten minutes before the end of the full ninety minutes, so that we could once again form a circle and take a summarised look at the working session. In this aspect, we were clearly influenced by the reflective practices proposed by the philosopher Dina Mendonça in the course of the first residency of the project. We therefore asked each student to tell us, in their own words, what that experience had meant for them, what had gone well and what had gone not so well, how they had felt about it. This kind of collective summary also served as a way for the artist-teacher pair to immediately assess each working session, helping us to cultivate active listening, which allowed us to gradually understand how our proposals were being received. Here are some examples of the questions that we used to prompt a summary in the closing rituals:

Today’s lesson in one word...

What you liked and what you didn’t like...

If you could repeat one exercise, which would it be and why?

A difficult moment in today’s class was when...

What are you going to take away from today’s lesson for the rest of your life?

Share with us something that surprised you...

The irradiating subject

There always comes that crucial point when a student has the courage to ask “the question” that others may have thought about, but which they didn’t dare to ask:

And when will we begin to study the subject?

This question could be broken down into its closest relatives: “In what way does this contribute to my happiness?”, or “When do the classes become serious?” – a question that frequently takes the teacher away from the seriousness of the matter, as, for example, at the end of a lesson when, after the teacher asks the class if they have understood everything and receives a collective “yes” as an answer, someone then makes a comment that seems totally out

of place, as if they had just landed from another planet, causing the teacher to despair. We also had such a moment, linked to the students’ concern with the final results, expressed as follows: “This is all great fun, but we’re going to have a Portuguese exam.” We know how students like to organise their studies in a practical way, directing themselves towards “what will come up in the exam” and placing all the rest in the background, especially when they have a lot of subjects or are about to fail. Here, it should be pointed out that, from the very outset, the teacher Maria Bárca made sure that she had the support of the children’s parents or guardians, having explained to them the premises of the project, how long it would last and what this would involve. Only in this way, with the community of parents duly informed and involved, could we take some of the pressure off the students. Furthermore, while the texts produced by the students and their involvement in the project were not subject to any formal assessment, they never stopped being subjected to their regular formal assessment, which consisted of them doing two tests during the first period (i.e. during the time when the project took place). This reassured the students, because it meant that they were going to have a “mark” for that period. It is, however, curious to note the contradiction expressed by someone who, at the very beginning of the project, claimed that they wanted more practical lessons, only to ask about the “syllabus” later on.

This attitude has some implicit notions that it is important to *undo*. The first is the idea that teachers are the guardians of information that they then regurgitate in front of the students, who are mere empty receptacles. A teacher irradiates the subject-matter, which the students, like solar panels, absorb and transform into “exam answers”. The second notion forms part of a historical context of a compartmentalisation of knowledge, in a highly specialised society, in which “this is Mathematics”, “that is Portuguese”, as if what we know did not form part of a whole, did not come from life itself, with all these different items being interconnected and communicating with one another. By saying this, I don’t mean that analysing a literary text is the same thing as solving a mathematical problem, but rather that this compartmentalisation frequently gives rise to difficulties for the students in establishing links between different forms of knowledge, connections that are essential for a professional life that increasingly requires the development of basic skills such as flexibility, innovation, imagination and the capacity to move easily between different languages.

Finally, the proposals that we were trying to promote required an active attitude on the part of the students, where they were agents of their own knowledge, which called for an effort that they aren’t used to making when they find themselves in “exam response” mode. This calls for an extra effort of breaking ingrained habits, especially mental ones, which are automatically activated in order to make sure that a lesson goes in a certain direction and not in any other way.

In our case, it also meant that students were required to develop an analytical mind, for, while, at a certain moment, they were writing their own texts, constructing the contents of the subject that they were studying, they later compared them with the literary texts that formed part of the syllabus for that subject. For example, when they read “Autorretrato” (Self-portrait) by Bocage, they activated the memory of writing, reminding themselves of what they had written when they were doing their own self-portraits, recognising the implicit methods that the author had used in preparing the text, identifying similar or different words from the ones that they had used and developing an analytical way of looking at the text, which is essential for the teacher of Portuguese, who wants the students to write, read and interpret specific questions, to understand what is read, as well as to train and develop their capacity to present and elaborate different arguments.

A lesson in the street

Also connected with this idea of linking together different forms of knowledge, it was important that we undertook a lesson in the street, since, just as I initially stated that there was something of the home in the classroom, there is also something of the classroom in the street. At the end of the day, literacy is, above all, related to our capacity to read and to interpret the world in which we live. We can say that this was our seventh strategy, or micropedagogy, to lead the students to be readers of the world, based on a session of writing in the street inspired by the Aristotelian peripatetic movement and the practices of the Situationist International movement, which, among other things, include walking as an aesthetic and political procedure. Below, we share with you the instructions that were handed to the students at the start of a long walk, which, although it took place as a group, was held in silence, with occasional stops for writing purposes.

Research in silence: techniques for listening and seeing ●

#1. Corporal references (choose one and/or alternate)

- Focus on the area from the ground to your hip
- Focus on the area between your hip and your neck
- Focus on the area between your neck and the sky

#2. Make a collection of lines, points, surfaces

#3. Notice one of the following pairs

- A secret characteristic/an infinitesimal detail
- A hole/an opening
- A scar/an alteration

#4. Observe

- what can't be seen
- what isn't used
- figures changing around a firm centre

#5. Ask: when will you look again?

Coda

It may be frustrating to hear the students saying that they don't understand why they have to study Portuguese as a subject if they already know how to read and write, especially when, at secondary school, the subject involves complex exercises of interpretation, analysis and criticism, from an interdisciplinary perspective that is characteristic of the Arts and Humanities. And even when it is generally known that writing, just like language, does not exist just for the purposes of communication, but in order to think and to organise one's own thoughts, limiting words to signs, forgetting the symbolic and metaphorical dimension that they include, is impoverishing. Our approach for inverting this perspective was constructed in close conjunction with the students, in this case grouped together as a whole, aware that the difference between the students also constituted a rich source of possibilities for inverting this paradigm, since they did not all think in the same way.

In short, the main micropedagogies that we used were:

1. Using the concept of dramaturgy to create a line of meaning that gave coherence to a whole, to a lesson and to a series of lessons.
2. Inverting the paradigm of reading/writing, to writing/reading, beginning with exercises of rapid writing, in order: to unblock the “I can't do it” and, through reading aloud, to gain confidence in our own capacities; to understand what we write; to be more capable of relating our texts to the texts included in the syllabus for the subject.
3. Using autobiographical contents as a springboard for beginning to write, resorting to the “self” as a starting point.
4. Taking the difficulties felt by the students seriously, with the aim of making them feel valued and, at the same time, giving them responsibility for overcoming their own limitations.
5. Using individual autobiographical writing, so that the students could get to know one another and create summaries, contributing to the construction of a collective;
6. Thinking about the lesson as a ritual that generates confidence and trust between the artist-teacher pair and the students, and between the students themselves.
7. Holding a lesson in the street with the aim of breaking the normal format and establishing relationships between the world, the “self” and what we learn at school.

In a text that amounted to a reflection on the first residency between artists and teachers, the philosopher Dina Mendonça began by characterising what, in a later phase, we came to refer to by the name of “micropedagogies”, being considered micropedagogical gestures, which, for me, coming as I did from a theatrical context, was revealing with regard to what could be the articulation between artistic and pedagogical practices. As a student of theatre, I learned that a gesture is not just an attempt within language to express abstractions and concepts, a gesture also *expresses*, encloses within itself idiosyncratic characteristics of our own person, transmits our psychological and emotional states – and it is in this space that the actor moves, regardless of the conceptions that one may have of gesture, which have varied over the different ages. In this way, a gesture, when it is materialised, proposes an idea, a subjective perspective about that idea, as well as an aesthetics. Being aware of this dynamic is essential for any person whose profession involves communication, be they artists or teachers. And it is in this common territory that artistic and pedagogical practices can “contaminate”, influence and enrich one another. During this process, I myself began to become more aware of the methodologies that I develop and, above all, it became increasingly important for me to map the history of my own artistic practice, to know where it comes from and what traditions it includes.

There is a special ontology that is peculiar to artistic languages and which involves, among many other things, imagination, body and thought, going much further than the mere transmission of tools, and it is in this aspect that the dialogue between artistic and pedagogical practices may be important for teachers and students who do not wish to cease to be amazed by a world in a permanent state of change. The space of the classroom is like a form of teleportation created especially for this relationship between teacher and student, which results in the common amazement that they both bring with them; artistic practices can only accelerate the process.

The description that I present here in a more or less systematised fashion could not have happened without the students of class CT4 of the 10th year of the Escola Secundária Padre António Vieira, in Lisbon, during the school year of 2012/2013, and, above all, without their teacher of Portuguese, Maria Bárca, who decided to involve herself in a project that took her out of her comfort zone, at a time when being a teacher meant having a huge volume of bureaucratic work to carry out, besides the hours spent giving classes, attending meetings and assessing the students.

My eight years’ experience as a teacher of drama at state schools only allows me to conclude that this experiment is nothing more than just a drop in the ocean – but in an ocean that is composed of many drops of water. The secret may continue to lie in the famous quotations from Samuel Beckett: “All of old. Nothing else ever. Ever tried. Ever failed. No matter. Try again. Fail again. Fail better.” ●

Guide Maria Gil

72 73

Testimonies from the teachers in the **10 × 10** project Transdisciplinarity and the communication of scientific contents

Ângela Rebordão
Physics and Chemistry,
Escola Secundária
Filipa de Lencastre

Many years ago now, a student asked me why Physics was so difficult to learn. I don't remember what my answer was; I probably tried to dissuade her from thinking that way, or, if perhaps I was feeling impatient, I may have told her to study harder. I have to admit, however, that there have been many occasions when I am correcting tests that I have wondered why on earth it is so difficult to teach science. There is no shortage of books, training courses, pedagogical theories or even just simple advice that seek to point out the way to teachers who aspire to become the experts they always dreamed of being; but pedagogy is a room that has many doors, where the same action rarely leads to the same results. Many years of experimentation, trial and error are needed to transform a teacher into a professional who is capable of planned improvisation, or, in other words, into an "artist". And it was in the context of this search that the 10×10 project suddenly came into being, which was to become one of the most interesting training experiences that I have ever had as a teacher and as a person (because the nub of this question is that we cannot separate these two dimensions).

Having an artistic partner in the classroom, planning the activities with someone who is not a teacher and taking part in an artistic residency, were all challenges that meant a change in my practices and a complete immersion of my reason and senses that I had never experienced in any training scheme before, not even in my initial training as a teacher – where, as a general rule, an appeal is made to one's intellectual capabilities and technical skills. The changing (or better the adjustment) of my teaching practices did not arise only from the acquisition of a series of artistic micropedagogies that enriched my store of educational tools and instruments, but it also affected my personal training as a teacher. For, if it is the teacher who plans the class, prepares the contents and chooses the exercises and the activities that are to be performed, the one who is exposed to the gaze of the students is the very person that this teacher is. It is their movement and voice that embody the activities that they have planned and, when they interact with their students, they do not limit themselves to teaching what they know, they also teach what is or what seems to be. The presence of the artist, whose action is necessarily more than just a form of coaching, will highlight the interpersonal relationships within the group, as if we had invited a squirrel to come to the aquarium and we could then observe its new habitat through its eyes.

The success of this project lies precisely in this combination of the experiences of the teacher and the artist and in the possibility of joining together concepts and contents, using artistic tools for the construction of scientific knowledge. The work that the artist-teacher pair undertook was an act of pedagogical creation, which, like all acts of creation, did not arise from the application of a theory, or a formula, nor even a tradition (although it was obvi-

ously related with the nature of being a squirrel or a fish). It was a leap in the dark, pure experimentation, without any guarantees of ensuring that Physics would be transformed from something difficult into something easy.

It was enough for us to look at the curriculum and at the management of the teaching schedule to realise the increasing fragmentation of school knowledge. The aim is a well-intentioned one, seeking to improve learning by reducing its technical nature and optimising the use of the different time slots, to *teach everyone as if they were just one person* as economically as possible. And I am not going to discuss its merits here, because I believe that these strategies have made it possible for a poor country such as ours, in the last two decades, to produce the generation that is the best academically prepared ever. However, this mechanistic vision comes at a cost: we lose the notion of what is complex. One of the reasons why Physics is *difficult* (we could say the same thing about science in general) is the apparent distance that is created between teaching and reality. Transdisciplinarity between the arts and sciences is something that has already been around a long time, but its pedagogical application is not yet a widespread practice and it may be helpful for teachers to reconstruct with their students this relational knowledge that seeks to unite concepts and contents into an integral whole.

As the teachers themselves cannot individually change the curricula, nor the time or space in which their teaching takes place, they need a large amount of creativity to reacquire some of the power that the growing bureaucratisation of the educational system has taken away from them. The power to be the constructors of knowledge in detriment to their being mere replicators of manuals and curricular guidelines. The 10×10 project allowed for an upgrade of creativity, which derived from a long process of activities based on corporal expression and the use of the voice, from games of improvisation and imagination. Nonetheless, in the eyes of the technician that there is in me, it seems to me to be a handful of nothing, but it isn't. The series of experiences put together in the course of the training sessions, as well as the experiences shared with the other teachers and artists function rather like an alchemist's crucible from which one can draw one's inspiration. I use the word inspiration here because it is hard for these micropedagogies to be imitated, given that they are contextual in nature; they may be transformed, fused together with other pedagogical practices and adapted to the teacher's style, but they cannot be applied as if they were formulas. In some ways, they are like the very act of learning and teaching itself: unique and personal.

**Testimonies from
the teachers in
the *10 × 10* project
An emotional journey
into knowledge**

76 77

**Isabel Machado
Portuguese,
Escola Secundária
de Caldas das Taipas**

Participating in this project was a privilege and a great opportunity for renewing my teaching practices. After many years of teaching, routine begins to take over and it brings tiredness with it. Enthusiasm gives way to conformity, and you feel less and less desire to change; working with your peers doesn't happen as much as you would like, due to time pressures and other reasons, and there are fewer moments available for shared reflection. We are thus left with the impression that there is nothing more that we can do, and we carry on our way, believing that we're doing everything right, but, at the same time, feeling that we could be doing much better.

The school should be the space where people's wishes to respond to the challenge of our present-day society should come together, adapting to the constant and rapid changes that we are now facing. Within this proactive structure, teachers should be equipped with multiple languages so that they can provide their students with different ways of expressing themselves and, in this way, becoming capable of facing up to the contemporary challenges. It is at school that such changes can take place, it is here that students spend much of their time, and therefore it is here, too, that they are trained and that they grow, acquiring knowledge and developing skills that make them freer, more capable and more autonomous.

For this reason, in January, 2014, as soon as I saw the first Public Lessons in Guimarães, I realised that this was a project that made a difference and that, objectively, I could change the routine of my days and transform my conformity into action. I was delighted with the creative lessons, seeing the teachers dedicated to their task, the students and the artists happy, developing dynamics that stimulate and involve everyone concerned in the teaching and learning process, particularly the students.

I believed, at that time, that it was possible to change and my enthusiasm began to get the better of me. In no time at all, I found myself completely immersed in the 10×10 project, attending an artistic residency in Lisbon, where I made my first contacts with the artist João Girão. I began, then and there, to think about how best to combine the contents of the subject of Portuguese with the artistic proposals, to reflect and consider how to establish my first contacts with the students. I felt myself to be full of life and endowed with the capacity to dream; a new horizon was opening up before me... I was aware that this was an opportunity that I couldn't afford to waste and so I summoned up all my energy to ensure the success and viability of the project.

It was with such an attitude that I threw myself into the 10×10 project, where I found everything that I needed – new methodologies and strategies, the artistic component and the micropedagogies. My participation was, therefore, founded on my immense desire to change and to alter the routine that was beginning to take hold of me, in the sense of being able to build a learning space, a space of emotional comfort, happiness and the wish to learn more and more

each time. The project made me feel more animated and revitalised, brought me confidence and provided me with all kinds of tools, making me more capable of overcoming the everyday problems and setting various creative mechanisms in motion.

Two main lines of force guided my work along this path. On the one hand, the chance to take advantage of/enhance the project's artistic dimension in order to be able to think about more creative and more dynamic lessons, where it would be possible to combine the syllabus with the artistic universe, and, on the other hand, the chance to work on the students' more emotional side, creating routines that would stimulate and promote concentration, attention and personal knowledge. The challenge was to bring together in the educational act the proposals of the syllabus for the subject being taught and, at the same time, to succeed in ensuring that everyone experienced what was being done both internally and in a most intense fashion. So that this symbiosis could be achieved, it would be necessary to establish complicities between the members of the working group – the teacher, the artist and the students.

To this end, it was essential that there should be some initial sessions between the teacher, artist and students based on a philosophy of sharing. It was urgent to create an environment where each person could be themselves, say what they wanted, and do things without fear. A sense of mutual trust was gradually built up and the micropedagogies that were implemented helped to develop this atmosphere of affection and great togetherness. "My notebook" was the "object" that, in its various dimensions, made it possible to bring everyone and everything together. In all the sessions, it was possible to see the desire that everyone felt to build up their notebook, installing/recording the fruits of their research, their personal reflections and the various learning outcomes that they had achieved.

This personal construction of a whole, bringing together the whole(s) of each and every person, created a stimulating path that brought the class closer together and gave them a sense and a purpose; the group was formed and was heading towards a unified whole, just as one of the students was to put it:

"With each new challenge that was presented, we gradually incorporated the force of each word on the paper, and we let the words jump up and bounce around the classroom in sessions that we held for the expounding of ideas and the acquisition of fresh confidence. It was like a group therapy, our class evolved with a sense of overall complicity, a greater knowledge of one another and the acknowledgement of our emotions, and all of this influenced the way in which we showed ourselves to one another. Each meeting brought something new, someone who would surprise us, someone who would bare their soul with such clarity, always there was someone who chose the beauty of poetic words in order to compose their

prose. A simple notebook with sheets of paper that were not very white and which had a hard black cover, gave us a different understanding of a class and a union of all the small pieces of our souls, which we joined with the syllables with which we make words, the words from which we compose our sentences, the words which form the self-portrait that we perfect with each release of our thoughts.” (Ana Margarida)

Every day, the work group felt a new stimulus and a great desire to participate, to reveal their world and to learn. On many, many occasions, I felt that the working sessions were being held in spaces of happiness, because they brought significant learning. Clearly, the class felt the project, understood the deconstruction that it involved and felt stimulated to give their best.

At the end of most of the sessions, a micropedagogy was implemented that consisted of a challenge to think. It functioned in the following way: a bag was drawn on the wall or on the floor of the space where the lesson was taking place and, next, a blank piece of paper was handed to each person, where we all wrote a word or a phrase, or responded to a question; later we would throw the pieces of paper into the bag. In all the sessions in which this challenge took place, everyone wrote something on their paper and left it in the bag. And, for me, it was very exciting to “empty the bag”, it was touching to read what everyone had written. Unfolding the little pieces of paper, frequently in the company of João Girão and Judite, was, for me, a moment of great reflection and one that sometimes threw up new ideas.

Throughout these three years, “My notebook” continued to be a reality both as a space of written expression and as a space of personal knowledge. It was the students themselves who claimed that this notebook should be afforded the status of the material that was taught in the Portuguese lesson. On this subject, I now quote the words of some of the students who participated in the project:

“So, from the idea, which seemed a little strange at first, we moved on to practice, and, as Fernando Pessoa wrote: “At first, it’s unfamiliar, then it strikes root!” And, without our noticing, “My notebook” had passed from being an extra material to being an essential material. With this, we seek to perfect our writing, giving full vent to our imagination, for it is always much easier to acquire knowledge in a freer and less forced way.” (Nicole Silva and Inês Monteiro)

“All of these activities serve not only for us to practise our writing, but also for us to get to know ourselves a little better. We live in a world where being ourselves is increasingly difficult, seeing that society already traces a path for us to follow involuntarily. These moments are memorable, since in fractions of a second we are ourselves. And I can’t say anything more, because as our teacher Isabel says at

the end of each lesson when we use our notebook: “What is said here belongs to ourselves alone!” (Elsa Sobral)

Even today “My notebook” continues to be filled with many pages; in it, we find many moments of genuine learning, in it we find feelings and emotions, and in it are kept all kinds of secrets and complicities. “My notebook” established its own very special space in the lives of these students and the teacher. Close to the end, the loose sheets begin to pile up, telling a beautiful story of sharing and cooperation. We dream, we cry, we learn, we become emotional, we make mistakes, we argue, we acknowledge our weaknesses and we broaden our horizons, all together. We rid ourselves of our prejudices and we tear up the sheets of paper... being able to be who we are in the classroom is a great privilege.

In parallel to all of this investment in the group, another of the aspects that gave solidity to the project was the enhancement of the physical space as a poetic place of learning – one of the great challenges that João brought us. It happened in the square of astronomy, it happened in the training room, it happened in the room of expressions, and it happened at the Spa of Caldas das Taipas. All of these spaces were highly motivating for the development of activities. The students began to be able to maintain their levels of concentration, regardless of the space in which they found themselves and these new experiences fostered their motivation and creativity. Getting away from the routine, finding another place, adapting to it, appropriating the new space, all of this is very enriching and rewarding. For this reason, we continue to leave the classroom in order to seek inspiration.

All of these dynamics created a very great sense of complicity among the members of the whole group, even though things may not always have turned out as we planned; but this reinvention, restructuring and/or constant change of plans was what helped to solidify the project, giving it strength and life.

As the teacher, I wanted to be a whole person, I didn’t want to be simply the teacher of the 10×10 project for just one class. I therefore forced myself to diversify my practices in my other classes as well, since I soon began to experience the conflict of the separation between the class of the project and the other classes. Of course, I immediately began to want to have another type of experiences with other students, encouraging drawing, words and the use of the body as the driving force behind challenges, inciting them to leave the classroom and to experiment with some micropedagogies.

I also tried to infect the other teachers with my enthusiasm, sharing with them the conquests that I was making, as I could gradually feel the students becoming more involved and learning to do more things, and in a better way, too. Some teachers allowed themselves to be seduced by the creative methodologies that were being used, making room in their lessons for new experiences. There were even

two teachers, Manuela Aguiar and Luís Costa, who continued the project into the following year. The training sessions that were given by artists at the school, under the scope of the project, also helped to involve the other teachers. Some seeds were planted – let's hope that they will later germinate.

Looking back, I feel that I now have much more energy as a result of everything that the *10x10* project gave me and the reflections that it obliged me to make, for my teaching practices have been renewed; they have changed and made me more aware. For me, it has become central to my work to give attention to the students entering the classroom and bringing with them a world of dreams and wishes that they intend to make come true. I have come to the conclusion that working on these dimensions not only helps me to get to know the students better, but it also helps them to get to know themselves better, to reflect upon themselves, seeing themselves as subjects that are learning and reflecting on the objects of their study, on the different paths that can lead to learning. In this way, students begin to value knowledge and are left with the wish to know more. This will turn them into individuals who are more aware and more critical, participating more in the choice of the knowledge that they want to learn and gaining greater autonomy to recreate and renew the realities of the world in which we live.

Forming a group that is cohesive and motivated prepares the ground for learning activities which, after a given moment, occur naturally. Combining the contents that are to be learned with artistic experiences (occurring through the use of a multiplicity of languages, ranging from the verbal to the visual or dramatic) made it possible to construct knowledge in a more personal way, and now marked with one's own identity. In this way, the body identified itself completely with the words and the lines that were drawn; the materials acquired their own status, just as the spaces themselves did. Time, however, was never the same again: it became richer, and could be experienced with the whole of the body. Now nobody needs to leave part of themselves outside the door.

Testimony Isabel Machado

82 83

Testimonies from the teachers in the *10x10* project Assessing students after the *10x10* project

Paula Cruz
Portuguese, Escola
Secundária do Cerco

In the 10×10 project, the stress was never placed on the assessment process, but on the pedagogical strategies inspired by the micro-pedagogies. However, since the assessment process is indissociable from the teaching/learning process, some teachers took advantage of the path that had already been laid with the artists and extended the dynamics of the 10×10 project to the moments of formal assessment. In the following examples, the aim is to outline the different ways that the teachers found to undertake this assessment.

A teacher of Portuguese who took part in this project considers that assessing the contents that are explored in a project with these characteristics is a daily reinvention, not because of the lack of available elements, but because it obliges the teacher to deviate from the established paradigm. In her case, respecting the guidelines of the Pedagogic Council and the Curricular Department, the tests followed the normal typology of an exam; however, at the moments of written expression, the experience of the students under the scope of the 10×10 project was also taken into account:

Writing poetry means being alert
Sophia de Mello Breyner Andresen

In a well-structured text, with a minimum of two hundred and a maximum of two hundred and fifty words, try to reflect on the above statement by Sophia de Mello Breyner Andresen, also making use of your experience with the construction of “My Notebook”.

In order to justify your point of view, make use of at least two arguments, illustrating each of them with at least one significant example.

The workshop style of work that was required by the micropedagogy “My notebook” (p. 181), involving the rewriting, rereading and constant re-entering of the students’ creative texts (memories, disorganised poems...), was the starting point for an assessment that was more closely shared between the teacher and the student, and consequently (why not say it?) more consensual. From among all of the texts that they produced, the students selected two texts to be classified and assessed for each school period.

In the subject of Portuguese, speaking skills have a 25% share in the assessment of students; thanks to the project, various shared moments were created, albeit more informal in nature, which greatly benefited the calculation of the final assessment. Speaking skills were also assessed based on the tasks of “My notebook” (the expressive reading of a text, dramatised/staged reading, an explanation of the entries and re-entries that were made...). The assessment of speaking skills was the responsibility of the teacher, who, during the session, discreetly recorded their considerations about the placement and projection of the voice, rhythm, vocabulary, fluency, the pertinence of the ideas

expressed and the organisation of the discourse. Another teacher of Portuguese, who always considered the assessment of speaking skills to be a highly complex question, working under the scope of the 10×10 project, created a table with various items and distributed it among all the students. At those times when speaking skills were being assessed, which were based on a memory that could be shared, everyone recorded a score for each item in the table. The mark that was awarded for speaking skills was therefore the result of the score given by the teacher (with a weighting of 40%) and the sum of the scores awarded by the speaker’s classmates (with a weighting of 60%). Among the advantages of this form of assessment, attention is drawn in particular to the sharing of responsibilities and to the importance that was given to the various items that together make up the various speaking skills (contents, fluency, rhythm...).

In the first session of thinking and reflection, led by the project’s philosopher, a wide-ranging discussion was held about the question: “Is it possible to teach happiness?” This was the first moment when the class became involved in such debates in a simultaneously affective and effective way. For this reason, and because of the pertinence of the question, this was incorporated into a moment of formal assessment. Since, at this session, several arguments were put forward – some in favour of the possibility of teaching happiness and others most decidedly against – together with examples that corroborated these same arguments, it became logical (and coherent) that the same question – educating for happiness – should be used in the written textualisation exercise of the test as a leitmotiv for the writing of an argumentative text. The fact that prior to the moment of textual planning and written textualisation there had been a broad reflection and debate on the subject made it much easier for the students to select arguments and examples.

The two teachers of Portuguese recognise the importance of the 10×10 project in the assessment of Being/Knowing How to Do (attitudes). The component of attitudes and values has various weightings in assessment, depending on the schools, and, no matter how many indicators are created, it is always highly subjective in nature. Because of its very particular nature, the 10×10 project created moments when that dimension of the students was clearly visible: autonomy, responsibility, respect for the other, quality of interpersonal relationships, solidarity.

A teacher of History and a teacher of Portuguese, working in close collaboration with the artist, looked for strategies that could lead to a more effective assessment of attitudes and behaviours. In each of the lessons, the artist-teacher pair kept records about students’ attitudes, which they then compared in their weekly working sessions, analysing procedures and looking for reasons for the low level of involvement or even the non-involvement of a certain student or students in the activities that were presented. It should be stressed that the fact that the 10×10 sessions were undertaken with the participation of two

teachers and the artist allowed for a more detailed observation of the work undertaken by the students, from different and complementary perspectives. During and/or at the end of the lessons, in moments when there was a pause, the students were frequently questioned about their behaviour – alienation, lack of commitment, disinterest – and about ways of modifying and improving it, so that, through a process of self-reflection, they could assess their own performance. Being closely linked to the programme contents and the micropedagogies developed, the assessment also had to be done in the tests that were scheduled and planned at department meetings. In this way, it was agreed between the two teachers and the artist that, both in the subject of History and that of Portuguese, one of the questions would have to reveal, as pertinently as possible, the link referred to earlier, so that the students could sense and become involved in this new way of learning. It was also agreed between the two teachers that, besides being subjected to this integrated form of assessment, the students should also be specifically assessed in relation to the *10×10* project itself, taking into account such parameters as:

- the ability to overcome barriers and obstacles;
- the ability to reflect and make critical appreciations;
- the spirit of sharing;
- respect for the other and for differences;
- individual, pair and group work.

It was in this spirit that the self-assessment and hetero-assessment actions were undertaken, at the end of the first and second school periods. The two teachers and the artist assessed the students in a working session and concluded that the self-assessment recorded by the students, in small texts, differed very little from those made by the teachers and the artist. The score that was obtained was registered in the assessment table, under the formative and attitudinal component. This aspect clearly favoured some students, who, although they recorded very low scores in the tests, could raise their negative mark to a level that allowed them not to have to give up the subjects and to try to overcome their difficulties by the end of the school year. This strategy led some students to obtain greater success in the final list of marks recorded at the end of the school year.

Two teachers who worked together as a pair with an artist prolonged the team spirit and extended it into the exercises for formative and summative assessment. Since it was recognised that some of the difficulties faced by students derive from their (lack of) understanding of the question papers, some exercises in Physics and Chemistry were first worked upon in the subject of Portuguese. The work of textual decodification was not, however, limited to working on the question papers for Physics and Chemistry in the subject of Portuguese, but

also included (in the same working proposal) exercises relating to the subject of Physics and Chemistry in the Portuguese lesson.

Among the various possibilities offered by this type of joint proposal, we highlight these interconnections between different school subjects and the enhancement of the flexibility of the knowledge acquired in this way. In the first formal moment of assessment, the teacher of Physics and Chemistry resorted to a dynamic that had been demonstrated in a session of the *10×10* project, asking the students to complete a narrative, based on some information that they were given, in which the main character was an electron:

1. Some periodic properties, such as ionisation energy and the atomic radius, vary with some regularity in the Periodic Table.
 - 1.1. Explain why ionisation energy generally decreases down a group in the Periodic Table.
 - 1.2. Write the electronic configuration of Mg and Ca in their ground state.
 - 1.3. Based on the relative positions of the elements magnesium and calcium in the Periodic Table, justify why the ionisation energy of magnesium is higher than the ionisation energy of calcium.
 - 1.4. Based on the chemical symbol Ca, present at least ten words from the family of “casa” (home).
 - 1.5. Indicate the syntactic functions performed by the constituents of sentence 1.2.
 - 1.6. Propose an archaic version of two of the questions formulated above.
 - 1.7. Highlight the command verbs used in all the questions of this exercise.

In keeping with the dynamic that you realised in one of the *10×10* sessions, complete the “story” with the following data:

Once upon a time, an electron in the Hydrogen atom which was in the ground state [...] returning to the ground state.

Data

- | | |
|--|---------------------------------------|
| → Absorbed | → 2 nd – excited state |
| → Emitted | → $\Delta E = 1,64 \times 10^{-19}$ J |
| → $\Delta E = -1,94 \times 10^{-18}$ J | → UV radiation |

This type of activity (storytelling), more commonly found in a written exercise from the subject of Portuguese, facilitates the structuring of a more significant mode: Physics and Chemistry can be a house full of stories. A teacher of Physics and Chemistry and another of Mathematics recognised from the outset that awareness is the first step to change. Thus, they developed a method of self-assessment in which the students used a system of green, yellow and red circles to express the assessment of their behaviour/attitude/learning/attention in class. Basically, it was an assessment of how they had felt about or how they had assimilated the lesson. In order to select the colour, the students necessarily had to reflect. This reflection was the driving force for a process of self-learning and self-assessment. For each of the subjects a polychrome graph was created displaying very interesting regular patterns that became the subject of a joint reflection between the teachers, the artist and the students. This was a very striking moment, innovative and shared with the community. In the formal moments of assessment, the scientific questions related with the syllabuses of the subjects were made to fit the contents that were being touched upon and physically experienced in the project. More than just acquiring knowledge, the students actually experienced knowledge. Everything that was built in the gymnasiums was used to shape the questions. The formality of these questions was dismantled and adapted to the reality of the students. The construction of a human ellipse from Cartesian coordinates was the basis for the study of the ellipse. The concept of equidistance, built and experienced through strings and music, was “naturally” transported to the universe of mathematical symbols. Human bridges created between students had their own correspondence in the study of the chemical bonds between elements. The three-dimensional construction involving all the students in the class had its analogy in a structure of sodium chloride. The study of more abstract, more hermetic concepts was made easier when it was first approached previously through the body, the senses and the arts. There is a demystification of the complexity of scientific contents, helping to bring the “self” closer to the knowledge. In this way, assessment and learning take place simultaneously: the students reflect on their learning, and, by reflecting, act in a conscious and responsible way with regard to their own learning.

A teacher of Philosophy prepared one of the assessment tests based on the work that he had undertaken in conjunction with his artist. The overall theme – “Ecological responsibility” – served as a pretext for working more closely with various groups and agents from the community, namely Ecorâmicas/2014 – Mostra de Cinema Documental sobre Ambiente e Sociedade, and “Respigar na Feira das Taipas”, an action that was directed by a chef and in which the students “gleaned” fruit and vegetables from the local market, which were then used at a community dinner cooked by the class and shared with their parents and guardians in the school canteen (see p. 172). The test

called for them to demonstrate the learning that they had acquired as a result of the dynamics developed by the teacher-artist pair:

Another strategy adopted, without detracting from the rigorous nature that should characterise a moment of formal assessment, was the use of humour and examples of proximity. For instance:

From the following sentences, indicate those which correspond to propositions, by circling the appropriate letter:

1. Taking into account what has happened, what we did and how we acted when gleaning (RESPIGAR) food at the market (FEIRA) and in cooking the vegetarian dinner (JANTAR VEGETARIANO)...
- 1.1. From the list that I am now presenting to you, distinguish the situations that correspond to happening (acontecer – AC), doing (fazer – FA) and acting (agir – AG), placing the abbreviations in the respective spaces.
 - a) Crying when you're chopping onions
 - b) Sweating with the heat of the saucepans
 - c) At the market, there were lots of vegetables that still looked to be in a good state
 - d) Tripping over the rubbish bin
 - e) Peeling and chopping onions
 - [...]

The use of familiar situations, besides increasing the level of the students' involvement in the learning process, helps to facilitate good interpersonal relations and generates empathies.

- a) Chef Dinis knows what the nutritional value of foodstuffs is.
- b) The students of class 10-K were interested in vegetarian gastronomy.
- d) Gabriel and Isabel are the names of the teachers, and Manuela and João are the names of the artists of the 10 × 10 project.
- f) This different dinner was a unique experience!
- i) Judith, were you expecting a dinner like this?
- [...]

The 10 × 10 project brings intensity, surprise and a sense of strangeness and is frequently disruptive; naturally, these practices have an effect on the assessment process: if you don't do the same thing, in the same way, you can't assess in the same way as you have always done before. Amid all the rules and guidelines issued by the Pedagogic Councils, the teachers will find the space that is needed to do something that is slightly different and to reassess their own assessment.

**Reinventing spaces
between art and education**
**Genesis, development
and main conclusions
of the research project**

90 91

Ana Luísa de Oliveira Pires

School of Education of the Polytechnic Institute of Setúbal

Elisabete Xavier Gomes

Maria Ulrich Early Childhood Educators' School

Teresa N. R. Gonçalves

Faculty of Education of the Federal University of Rio de Janeiro

**Researchers at the Unit for
Research in Education and
Development, Universidade
Nova de Lisboa**

INTRODUCTION

The research project “Reinventing Spaces between Art and Education” is based on the understanding that education is a multi-referenced field of action and thought, in which dynamics resulting from different perspectives – epistemological, disciplinary and methodological – are accepted and acknowledged (Alves and Azevedo, 2010). Thus, researching into education is a complex activity that has two main requirements: *attention* to the world and the phenomena that constitute education in the present day; and, as far as choosing what we know and understand is concerned, an *openness* in our way of looking at these questions, without anticipating meanings or working with pre-defined models (Alves and Azevedo, 2010).

The decision to study the *10x10* project derived from the research team’s interest in getting to know more about a project whose pedagogical proposals displayed a great potential for change and whose systematisation and dissemination could make an important contribution to education and pedagogy. For this purpose, the team adopted a qualitative research design, one that was open, emerging and flexible in nature, in order to respect the object of their study, having progressively constructed the theoretical framework that would support their way of looking at the *10x10* project.

The authors assumed as their challenge the possibility of establishing research as a strategy for monitoring, theorising and disseminating innovative and transformational experiences that give shape to these contemporary educational practices.

In this chapter, we present the main theoretical stances and premises from which the research was developed, as well as the methodology and a summary of its main conclusions, giving special importance to the pedagogical dimension of the experiences of the *10x10* project, particularly in relation to what these bring us in terms of an interruption of established bureaucratic practices and a renewal of its repertoire and languages.

1. THEORETICAL STANCE AND PREMISES

We consider it to be fundamental to present the positions that we adopted in relation to some of the central concepts and questions underlying the *10x10* project and to the analysis of its practices. Our stance was constructed from educational theory, taking into account the discussions taking place in the field of education and the above-mentioned aims of the research project. The clarification of our theoretical stance seems to us to be fundamental for establishing the context for the construction of our research and analysis, as well as for understanding some of the main conclusions emerging from the research project.

The term “pedagogy” has been used with different meanings, which do not always coincide with one another (Gonçalves, Azevedo, Alves, 2013; Biesta, 2010). The ambiguity of the term is linked to the historical development of education as a discipline (German tradition) or as a field of academic research (Anglo-Saxon tradition) and it has been the subject of analysis by different authors. Estrela (2007) states that this ambiguity is still maintained today. According to this author, the term “pedagogy” is used simultaneously to refer to an applied science (deductive), to the science that studies the relationship between educational phenomena (inductive), to a specific form of education – school education – and to the reflections that we make about this, as well as to pedagogical or practical action, and to our reflections upon this or to the coming together of thought and action. In our view, these ambiguities are due to a certain naturalisation of the concept. For this reason, it seems to us to be fundamental to clarify what we understand by “pedagogy” and the meaning that we attribute to it in this research.

In our view, “pedagogy” implies a way of life – what Jorge Larrosa (2015) has designated the “pedagogical life” – which simultaneously constructs itself and is constructed from a certain relationship with the world. A pedagogical life implies a relationship with oneself and with the world that goes beyond the formal and technical aspects that are usually attributed to pedagogy. As a relational field, the pedagogical field is open to sudden and unexpected tensions, requiring ways of thinking and acting that call for attention, care and commitment to the other and to the world. For this reason, certain ways of thinking, deciding and acting are required, resulting in possibilities that go far beyond what is prescribed or predetermined, and which result in their own ways of theorising about the subject and produce their own forms of expression. This approach counters the trend towards a homogenisation of pedagogical practices

A CERTAIN IDEA OF PEDAGOGY

with unique and different ways of doing things, thus making it possible for discourses, practices and languages to be more plural in nature.

The relationship with the world in the field of pedagogy takes place in an unproductive sphere, happening at a time and in a space that are intended to be genuinely free. The time and space of pedagogy, as the time and space of our meeting with one another, of the construction of ourselves as a unit and of the common shared aspects, only exists in the public space (Masschelein and Simons, 2013), in a space that cannot be privatised or even commercialised. The heart of pedagogy is its interest in the common good, in the construction of spaces and times of freedom, permitting, at each moment, a decision about what is desirable from an educational point of view. Yet, what is desirable at one moment or in one given situation is not necessarily so at another time, and is certainly not desirable in relation to the prevailing logic of production – since it does not obey the requirements of a merely technical or operational nature. For this reason, the so-called “pedagogical life” can only be understood and experienced in its ethical, aesthetic and political dimensions.

According to this line of analysis, some French-speaking authors (Houssaye, Hameline and Fabre, 2004) have proposed recovering the figure of the “pedagogue”, as the person who, through his or her action, combines both theory and practice. In other words, pedagogues are both practitioners and theoreticians of educational action. Pedagogy is understood as something that is “between”, which takes place in the specific interaction between the theory and the practice that exist in education. According to Meirieu (2006), it represents the opportunity to think about (and maintain) the contradictions that are inherent in education and in the educational task, as well as to think about educational principles, aims, facts and actions.

The interest of this proposal for the analysis of the practices of the *10x10* project lies in the fact that it enables us to think about them according to their pedagogical nature and in relation to the principles and aims that sustain the actions that are developed. It has a political, anthropological and philosophical dimension that makes it possible to go beyond merely technical or didactic questions.

The public dimension of pedagogy constitutes a central aspect for understanding educational contexts, processes and actions. In this way, the task of pedagogy is closely related to the common good, with the possibility of preserving and constructing a common world. Its public nature therefore has to do with the building of that world, with the form with which it is made public through education, through the construction of possibilities and experiences of freedom. It frees us from the productivist and privatising tendencies that are currently in fashion, recovering the idea of education as “a liberating process, a process whose aim is the realisation of freedom” (Biesta and Säfström, 2011). By distancing education from a modern vision of progress, the authors propose an understanding of education as a responsibility for the present, whose aim is freedom.

Analysing the practices of the *10x10* project in the light of this public dimension allows us to approach them from the point of view of their relationship with freedom, with the common good, in short with

the very experience of democracy itself. It is interesting to consider the way and the extent to which these practices make the world public. What knowledge, what meanings, what experiences are made public through the practices of the *10x10* project?

This understanding of pedagogy, in a broad sense, but even so not an all-embracing one, combines the theoretical and practical dimensions and makes it possible for us to establish a framework for actions, relations, conversations, contexts and rules with educational principles and aims. In this sense, pedagogy makes it possible to think about the unique and particular nature of the educational event, in its existential and public dimension, understood as relational and collective. For this reason, we move away from the currently prevailing perspectives that link pedagogy to the production of certain pre-defined results, following a productive and productivist logic, so that we may then consider how it can establish spaces of freedom, as a vital exercise in relating to the world and to others.

Observing the pedagogical and artistic experiments developed under the scope of educational programmes at museums and other centres of artistic activity (see, for example, Leite and Vitorino, 2008; Eça, Saldanha and Vidal, 2012; Thomson, Hall, Jones and Green, 2012), as well as studying the ideas being produced in the field of educational theory (Larrosa, 2013; Rancière, 2010 a. b.), enables us to construct a renewed stance about the relationships between art and pedagogy. The experiments that have been conducted and the paths that have been followed are organised around different approaches, which are not always convergent in their practices: art teaching, aesthetic education, education through art (see, in particular, the studies by Herbert Read, Arquimedes Silva Santos, and João Pedro Fróis).

Among the authors who have sought to systematise these relationships, we draw special attention to the contribution by Helguera (2011), which is concerned with the presentation of the pedagogical project of the 8th Mercosul Biennial. Based on the concept of “reterritorialisation”, developed by Deleuze and Guattari, Helguera proposes that we “imagine pedagogy as a territory that has different regions. One of these, which is the best known, is situated in the field of interpretation or education as an instrument for understanding art; the second is the fusion of art and education [...], and the third is art as an instrument of education, [...] art as knowledge of the world” (Helguera, 2011, p. 6).

The first region is worked on through the dialogue that is established between the mediator and the audience, from the point of view of sharing reflections and the expansion of individual knowledge, mobilising, for example, the ideas of critical pedagogy, developed by Paulo Freire, and of group dynamics, developed by Augusto Boal. The second region, the fusion between art and education, may be found through the exploration of specific works of art, through which the audience are invited to enter into a “playful world”, freeing themselves from temporal reality, through games and pedagogical dynamics in which the “experience is not only a scattered affair”, but rather “a constructive and generative experience that satisfies all members of the group” – even if they are not immediately

aware of this. The third area, “art as knowledge of the world”, explores the work of the artist “as an object of study that is to be valued as such, but also as a window to be able to acquire an understanding of themes that are of relevance [for other] fields” (Helguera, 2011, p. 7); or, in other words, the work of art is linked to and explored from the perspective of certain disciplinary fields, such as Geography, History or Literature.

Gaztambide-Fernández (2013) also reflects on various discourses and debates taking place on the subject of the arts in education, identifying tensions between different currents and trends. He identifies the expressionist current, which defends the idea that, through the arts, children express themselves better; the reconstructionist current, which attributes the arts with the power to transform the person and society; as well as scientific rationalism, which emphasises the heuristic relationship between art and knowledge. Above all, attention is drawn to his severe criticism of the prevailing instrumentalisation of the arts in education:

This ability to demonstrate what the arts do – whether it is to improve achievement or to make us better human beings – has become the holy grail of arts advocacy. [...] The rhetoric of effects is always caught in a positivist logic [...]. Moreover, a focus on effects has tended to obscure the actual experiences – whether positive, negative, or otherwise – that evolve within contexts defined by practices and processes of symbolic creativity typically associated with the concept of the arts [...]. (Gaztambide-Fernández, 2013, p. 213)

We adopt a similar stance in attempting to understand whether, in the *10x10* project, the central idea lies in the opening up of work processes or in the search for and confirmation of pre-defined effects and impacts. The concept of “bricolage”, used by Paley (1995) to think about the relationship between art and education, directs our attention to the possibilities of transformation through the incorporation of artistic practices into the pedagogical field. According to the same author, “bricolage” implies discontinuity and juxtaposition, decentring, and an association between disconnected parts. It represents an alternative to the compartmentalisation of knowledge, permitting the inclusion of the “difference”, resisting the objectification and reduction of the heterogeneity of the experiences and creating the possibility of an intertext.

The historical analysis developed by Bordes (2007) also assumes another perspective, insofar as it proposes and highlights an intrinsic relationship between the emergence of New Pedagogies in Europe from the eighteenth century onwards, based specifically on Rousseau, and the possibility of developing artistic vanguards at the beginning of the twentieth century. Bordes analyses Europe during the childhood period of some of the artists of the vanguard movements, highlighting the presence of the pedagogical proposals, for example, of Froebel and Pestalozzi, centred around drawing, educational games and a large group of new exercises developed for the education of children. Bordes defends the idea that the New Pedagogies marked the beginning of the democratisation of the art forms (which tended to be elitist) of observing, expressing and moving the body, permitting the separation between artistic practices, the work of art and the author.

Taking into account the various theoretical approaches that combine pedagogy and art, we acknowledge in this text the possibility of a heterodox dialogue between pedagogical work and practices and artistic work and practices. In choosing the term “dialogue”, we wish to state that, in this model, neither is pedagogy placed at the service of art, nor is art instrumentalised through pedagogy. In fact, in line with Larrosa, we “think of art and the classroom as places that have to do with a certain responsibility and a certain love for childhood and for the world” (2013, p. 40).

Larrosa (2013) and Rancière (2010b.) regard art and a certain understanding of artistic work as the opening up of another space and time that consists in the sharing of what is sensitive, in sharing the sensitive cloak of the world: “Artistic practices are not an exception when compared with other practices. They represent and reconfigure the sharing of these activities” (Rancière, 2010b, p. 53). In his elegy of the sharing of activities, Silva states that “art is one of the names of the group of techniques through which man gives form to the world and, simultaneously, forms himself” (2011, p. 29). This approach makes it possible to strengthen the link between artistic practices and pedagogical practices through the relationship that they both have with the construction of what is commonly shared and with the formation of the human being.

It is from this perspective that we are interested in observing the *10x10* project: through the way it opens up space and time for this dialogue, which fertilises artistic work and pedagogical work and positions them as elements in the construction of a shared and common world.

Considering that one of the main structural features of the *10x10* project is to be found at the level of the development of pedagogical situations that are then intended to serve as significant formative experiences, as much for the teachers themselves as for the artists and students, implicitly bringing into play the concepts of experience and learning, we considered it fundamental to contextualise these concepts from a theoretical and conceptual point of view.

There are several educational currents that attribute a central role to experience, recognising that it is one of the bases and also the necessary condition for learning and development. John Dewey, one of the main authors to stress the role of experience in education, defended the concept of education as the “continuous reconstruction of experience” (Dewey, 1916, p. 80, quoted by Pires 2005, p. 145). In recognising the importance of individual experiences, interpersonal dynamics and the autonomy of the subject in the learning process, Dewey significantly influenced the concept of experiential learning and attributed a central role to reflective thinking – establishing the difference between “activity” and “experience” and highlighting the fact that only through reflection is it possible to attribute meaning to experience, making it a formative element.

As we know, the concept of experience is a complex one. Among its fundamental properties, Honoré (1992) highlights relationality, temporality and reflexivity. Serving as a continuation of this perspective, we identify the proposal of Larrosa (2002), for whom experience is a globalising phenomenon and appeals to all the senses, having as its basic

● This is what the author says about this question: “Inventing one’s world is deciphering the signs that unexpectedly force their way into the human experience of the subject. It is due to the encounter with the signs that the subject has an experience of problematisation, when the differential nature of the sign affects them, creating a problem for their thinking. It is from there that the subject begins to search for a meaning to the problem, seeking to solve it in order to circumscribe a truth for it.” (Uberti, 2013, p. 1232)

condition the existence of a spatial and temporal context. Furthermore, experience requires passivity (in the sense of patience and attention), receptivity (regarded as fundamental availability) and openness. In fact, openness and receptivity are essential not only for ensuring that the subject may be available for the experience – hearing, listening, feeling – but also for attributing meaning to that experience. Experience is, therefore, simultaneously existential and contextual, as Larrosa underlines, highlighting “its relationship with existence, with the singular and concrete life of a singular and concrete experient” (2002, p. 27). Thus, it is through experience and the knowledge that it produces that people construct themselves and take ownership of this construction process: “Experience and the knowledge that derives from it are what enable us to take ownership of our own lives” (Larrosa, 2002, p. 27).

It should further be underlined that experience is unique, heterogeneous and plural, directing us towards the field of “non-order”, of the unknown, the uncertain, the unpredictable and the unrepeatable (Larrosa, 2002). It is pure “transformation”, insofar as it forms and transforms the subject: “Thus, the result of the experience is the formation or transformation of the subject of the experience. And hence the subject of the experience is not the subject of knowing, or the subject of being able, or the subject of wishing, but the subject of the formation and transformation” (Larrosa, 2002, p. 7). Or, in other words, underlying this proposal are also the principles of uncertainty and freedom – “Experience is a ‘perhaps’” (Larrosa, 2011, p. 19).

As far as learning is concerned, we understand that learning is not a way for the subject to adapt to the world, to recognise it or to establish a framework for its contextualisation, but instead it is a way for the subject to invent his or her own world, in accordance with the proposal made by Deleuze (1987, quoted by Uberti, 2013) ●. If we consider that learning is a creative process of searching for meanings and solving problems, which produces knowledge of a multiple and diverse nature, we also have to take into consideration that this knowledge is situated on two sides: on the one hand, it is constructed from the subject or subjects’ frame of reference, which is constantly being (re)invented; on the other hand, it is influenced by the elements and conditions in which the situation/experience itself occurs.

2. GENERAL METHODOLOGY OF THE RESEARCH

Theory and method are interlinked, as Graue and Walsh (2003) maintain. Both theory and method are tools that support (and sometimes restrict) research. Aware of this dual possibility, we tried at all times to assume a perspective based on openness and flexibility, in accordance with the nature and aims of the study. Consequently, we share the premise that “how one looks affects what one looks at, and what one looks at affects how one looks. [...] Research, like life itself, is a connected endeavor” (Graue and Walsh, 2003, p. 48).

The study undertaken here is based on the premises of qualitative research (Bogdan and Biklen, 1994; Alves and Azevedo, 2010) and interpretive research (Erickson, 1986; Graue and Walsh, 2003), and, as has already been mentioned, the theoretical frame of reference was built progressively, in an inductive way, based on the analysis of the situations, practices, characteristics and dynamics that emerged during the course of the *10 x 10* project.

An attempt was made to develop a methodology that ensured a dynamic relationship between theoretical research and empirical research, in order to maintain the necessary openness that is required by the inductive construction of knowledge. Instead of translating theory into practice, our intention with this proposal was to theorise practice and maintain the experimental nature of the theoretical exercise that accompanies, observes and questions the empirical project. In this sense, the research project developed along three central and interconnected lines of questioning, mutually intercepting and feeding off one another, namely:

- A) *How have experiences about the relationship between education and art been theorised? How can innovative educational experiences be theorised?*
- B) *What are the characteristics, impacts and educational possibilities opened up by the *10 x 10* project?*
- C) *What strategies are best suited to the dissemination of a project of this nature?*

The research work that embodied the first of this series of questions, based on critical analysis and writing, consisted in defining a theoretical and conceptual framework that would enable us not only to make a comprehensive reading of educational experiences, but also to study the potential enlargement of its effects/characteristics/impacts, as well as to interrogate and pluralise the relationship between theory, practice and research, with a view to inductively constructing a theory of education.

The second line of questioning was geared towards identifying the aims and empirical premises for the activities of the *10 x 10* project, understanding

2.1. RESEARCH INSTRUMENTS

its continuities and discontinuities, as well as legitimising the use of the 10×10 micropedagogies. To this end, we undertook an analysis of the documents produced under the scope of the project, constructing questionnaires to be addressed to the teachers who took part in the first three editions of the project, applying them and then analysing their results, taking part as observers in the meetings held between the working team of the Calouste Gulbenkian Foundation/artists/teachers, and also sitting in on the public lessons.

The third line of questioning had as its aim to disseminate the experiences and results of the research in progress, to organise the discussion of these at national and international conferences, promoting dissemination as a theorising strategy, and also to establish and/or strengthen networks of cooperation with other national and international institutions. This line of research was developed through a theoretical and scientific approach, consisting in the presentation of papers at national and international seminars and conferences, and their submission for inclusion in different types of scientific and academic publications: conference proceedings, journals, chapters in books. We also organised the international seminar “Spaces between Art and Education”, held at UIED-FCT/UNL, in December 2015.

Just like Graue and Walsh (2003, p. 148), we consider that “an instrument is a research tool constructed to assist in the generation of a certain kind of data in a systematic way”. As such, we constructed our tools throughout the course of the research, adapting it to the contexts, in order to gather relevant and pertinent information, taking into account our initial research questions, which were also (re)formulated during the course of the study.

We also tried to guarantee data triangulation – mainly through the use of different sources of information, spaces and people (Denzin, 1978, quoted by Graue and Walsh, 2003). It should be noted that the fact that the team was composed of three researchers with PhDs in Education Sciences, but with different backgrounds in terms of their basic training and with a wide range of different experiences, also contributed to the adoption of a multi-referenced approach, which always underlay the carrying out of this study.

Thus, based on these principles, we resorted to the following procedures:

— *Non-participant observation of the public lessons presented by the project’s participants in Auditorium 2 of the Calouste Gulbenkian Foundation (FCG), at the beginning of each calendar year (January 2013, January 2014, January 2015);*

— *Participant observation of the monitoring meetings of the 10×10 project, held between members of the FCG team, the teachers and the artists, throughout the duration of the research project (three years). For one of the meetings, a script was drawn up with questions that focused on the conception and use of the micropedagogies, which was used as the document to promote a collective group discussion (focus-group).*

— *Questionnaires addressed to the teachers (applied in the first three editions)●, with the aim of characterising, understanding and assessing the impact of the training project at the level of its concepts and practices. The questionnaire was organised into five thematic groups: personal characterisation, professional development, perceptions of the 10×10 project, micropedagogies and final assessment of the project. It included open-ended questions, closed questions and (4-point) Likert scales. The aims were as follows: to characterise the perspectives of the teachers in relation to the project’s effects at various levels and dimensions (on the students, and on the teachers’ educational practices and concepts); to make an overall assessment of the project, identifying the strong points and the less successful aspects; to gather suggestions for changes and improvements.*

— *Documentary analysis of the materials produced by the teachers and the artists: lesson plans, reports and other records and documents about the strategies produced; documents from the 10×10 project prepared by the FCG team, as well as the Notebooks of the Public Lessons and the Micropedagogies Document, among others.*

In the documentary analysis and the analysis of the records of the observations, special privilege was given to an interpretive consideration of the documents, so that, on the one hand, the wealth of the material collected would be respected and, on the other hand, it would be afforded greater visibility.

As Bogdan and Biklen (1994, p. 50) state, “qualitative researchers tend to analyze their data inductively”, mobilising concepts from abstractions that arise from the collection and grouping together of data. The theory is constructed in a “bottom-up” fashion; in other words, a framework is constructed as its forms are being delineated and as its parts are being put together, in a heuristic dynamics of knowledge production.

● The questionnaire was pre-tested with a reduced group of teachers and their contributions/suggestions/difficulties were incorporated into the final questionnaire. This was filled in by the teachers of the first three editions, roughly a year after the end of the respective edition. The time interval was justified by the need to create a physical and temporal distance from the assessment of its impacts. As far as the conditions under which it was administered are concerned, we highlight the fact that the teachers were summoned to attend beforehand, and in good time, and that the questionnaire was administered by the researchers in a room at the FCG.

3. THE QUESTIONS THAT GUIDED THE RESEARCH AND SHAPED THE MAIN CONCLUSIONS OF THE STUDY

Based on the questions that were originally drawn up in the questionnaire, we reformulated and reconstructed the lines of our research throughout the study, always from a dialectic perspective and with a spirit of openness to new questions that might arise, through comparisons that we made between the analysis conducted empirically and the theoretical concepts that emerged and were constructed inductively.

From these new lines of questioning, we highlight the following questions:

- I. *What are the distinctive characteristics of the pedagogical strategies that were tried out throughout the course of the project?*
- II. *What are the main aspects of the 10x10 project as a formative experience?*
- III. *To what extent can the 10x10 project be recognised as a unique project constructed in discontinuity with other formative proposals?*
- IV. *What intentions lay behind the experiences of the 10x10 project?*
- V. *What is the nature of the relationship established between artistic practices and pedagogical practices?*

Just as we stated in the introduction to this chapter, it is our intention to give greater visibility to the pedagogical dimension of the 10x10 experiences, which leads us to the gradual revelation of the characteristics that make it possible to interrupt established bureaucratic practices and renew repertoires and languages brought to us by the *micropedagogies* that are the central focus of this book. It is for this reason that the answer to the first question merited a greater in-depth study and extension, as we explain below.

The analysis of the experiences resulting from the interaction between artists and teachers, and between the artistic and pedagogical work processes made possible by the 10x10 project, enabled us to glimpse ways of doing things that concentrate more on exercises than on products, more on teaching/learning processes than on the “effective” learning outcomes achieved, measured in the form of tests and final marks.

We were interested in understanding the mechanisms, devices and principles established and recovered through interdiscursivity, realised in the form of a generative dialogue between vocabularies and artistic and pedagogical ways of doing things provided by the project under analysis. We consider that the strategies developed and tried out under the scope of the 10x10 project may be organised according to two dimensions:

A) 10x10 EXPERIENCES THAT MADE IT POSSIBLE TO RENEW SCHOLASTIC TECHNOLOGIES

Scholastic technologies [...] are by no means tools that, when used correctly, produce well-formed young people, like finished products off a production line. [...] Scholastic technologies are techniques that engage young people on the one hand and present the world on the other.
(Masschelein and Simons, 2013, p. 65)

Known as elements of scholastic technology or as devices (Chartier, 2002), there are components that define life at school and that, once they have been established and incorporated, function automatically and produce specific ways of being and doing things. The risk of automatisms in the use of scholastic technologies is especially high because of the mass spread of working instruments (see the case of the industrialisation of file cards, didactic games and other “ready to use” devices, which almost completely dispense with the need for the teacher’s own professional exercise) or the political and administrative institutionalisation (remember, in Portugal, the case of the Project Area and the consequent trivialisation that it caused in the methodology of project work).

In fact, the effectiveness of scholastic technology lies in the very smallest of details (Masschelein and Simons, 2013) – or, in other words, it is the details of the pedagogical exercise that make it possible for scholastic technology to catch the attention of the students, making them interested in something that lies outside them, in the common world (a skill, a language, an equation, an author, an exercise), to the extent of their committing themselves to passing from the state of “I don’t know/I can’t do this” to the state of “I can do this/I’m capable of doing this”.

One of the key elements of the relevance that we attribute to the 10x10 project lies precisely in the attention that is paid to the details, to the work that is realised in the *micropedagogies*. By being obliged to rethink the working mechanisms that are already incorporated into the teaching practices of each and every one of us, and which are sometimes used in a routine fashion, we concluded that the 10x10 project provided a certain interruption in the (not always) pedagogical automatisms, brought about by the interdiscursive relationship constructed between clearly pedagogical procedures and languages and clearly artistic procedures and

languages. The work of *bricolage* developed by teachers and artists made it possible to introduce renewed forms of discovering and establishing a relationship with the world through this generative dialogue between art and pedagogy. We consider that this generative dialogue of languages and actions was possible because the *10x10* project placed teachers and artists in a situation where they felt that they were beginning something anew, that they were radically involved in what they were doing.

In order to make this conclusion visible, we will use the pair of notebooks and routines/rituals – objects and practices that inhabit the territories of art and pedagogy – as key elements of the scholastic devices that have no author and which, because of their artistic influx, were thought about, reconfigured and infused with meaning throughout the various editions of the *10x10* project.

NOTEBOOKS

Chartier and Renard (2000), Chartier (2002) and Mignot (2010) identify notebooks as one of the scholastic devices that, despite their tendency to be used without thinking, make it possible to think about and to get to know the inside of the classroom, by making what the students are doing and what the teachers make them do visible. This historiographical research into the school notebooks makes it possible, first of all, to note their duration (they have been used since the time of the precursors of schools in the Middle Ages), the universal spread of their use (at different levels of teaching, in different subjects), as well as to note their pragmatic functions (they make the students do things and act), their pedagogical functions (they mark out the boundaries and limit the possibilities of the exercises that the teachers make them do) and their cognitive functions (the notebooks are instruments of thought and of the organisation, construction and consolidation of knowledge).

In the context of the plastic and visual arts, the notebooks of the artists, because they have an author, because they are public and are published, and because they represent “laboratories of the imagination” (Paul Claudel, quoted by Vale, 2015, p. 125), based on the 1960s and 1970s, have established their own autonomy as an artistic object, gaining the name of “artist’s books”.

Since the first edition of the *10x10* project, notebooks have been worked upon by the various pairs of teachers and artists: “Polyphonic graphic diaries”, the “Fieldwork notebook”, “Diary of unusual events”, “My notebook” and “Anthology”. These experiences appear as examples that mark the miscegenation between pedagogy and art, the above-mentioned interdiscursivity. In fact, just as occurred with the use of the school notebook device, the teacher-artist pairs *made* the students *do* the notebooks, defining rules for recording items, the languages to be used, and dignifying this instrument, as an integral part of the school work that was being experimented with. Perverting the most basic rules for the standardised use of the school notebook, the students were asked to use the notebook outside the classroom, outside the school, to record aspects of everyday life that are not considered by the educational institution to be part of the canon and which were not previously known about by the teacher-artist pair (see “Diaries”, p. 179).

In the *10x10* project, the use was proposed of diaries, notebooks and anthologies that expanded the limits of the subjects which characterise secondary education (it was proposed that the same notebook should be used to record situations and the exercises from the various school subjects) and made it possible to use different languages and different ways of keeping records (writing, drawings, collages, among others).

It was noted that the pedagogical experiences of the *10x10* project made use of devices that were familiar features of the day-to-day life of schools, so familiar that they were close to being forgotten, so forgotten that they were close to being automatisms. The reinvention of the notebooks, infused with a certain artistic quality, did not result in artist’s books, but they produced a school atmosphere, insofar as they captured the attention of each student, inviting them to indulge in an element of surprise, through their close and attentive relationship with the world that they inhabit.

ROUTINES AND RITUALS

The invention of simultaneous teaching in the eighteenth century, and the gradual replacement of the traditional methods of education, came to require the introduction of routines and rituals for the organisation of time, the space, the group and general conduct. However, today, the relationship that teachers and students have with the routines and rituals of school life is not a peaceful one, given their repetitive nature and their disciplinary function, setting up the group and community life, which fosters a certain normalisation of what it is to be human at each stage in one’s life. These dilemmas and ambiguities provoke some unease about routines and lead to some difficulties in the way that they are used and thought about.

By way of contrast, under the scope of the *10x10* project, a particularly fertile group of experiences was identified which acknowledged the need to give visibility, body and originality to the rituals and routines that form part of everyday school life (see the micropedagogies of stretching, the security rituals, among other examples). In the *10x10* project, the rituals contain an openly acknowledged artistic and playful dimension, which shifts and disconfigures the pedagogical action, causing it to be an element that disturbs the established environment, which makes it possible to ensure the student’s full enjoyment of each situation, avoiding the automatic repetition that has led to the stiffening of methods and techniques that so often are only ephemerally innovative (see “Making the invisible visible”, p. 142).

It was noted that the use of rituals promoted the necessary feeling of security and a certain decentering of each subject, which allows for a freer entry into a universe of enjoyment and experimentation. The reinvented rituals of the *10x10* project, where the performers (the student and the teacher and the artist) show themselves to a restricted community (the community of the classroom, of each class), makes it possible to suspend the rules that previously existed. Their relevance is accentuated by the fact that they have been identified by some teachers as examples of micropedagogies that continued to be used autonomously, already after the students’ participation in the

10x10 project, as well as the fact that they enabled the pedagogical imagination to be fed, causing it to be understood that teaching admits all possibilities, moving teachers away from the routine practices that are manifested

[...] in the most common ways of thinking about lessons, pedagogical practices, teaching and assessment methodologies: methods that are hidebound by prescriptive manuals, methods that are resistant to any form of boldness, to innovations and to any unaccustomed way of thinking that breaks away from what is already expected. (Loponte, 2013, p. 6)

B) 10x10 EXPERIENCES THAT PROVOKED A DISRUPTIVE FORCE AND LED TO THE EXPLORATION OF OTHER PATHS AND OTHER PEDAGOGICAL POSSIBILITIES

These are experiences that, although they form part of the pedagogical set of ideas announced by the New School or by Active Pedagogy, have had difficulty in taking root, but which, under the scope of the 10x10 project became possible. The creative potential of the 10x10 project allows for experimentation and openness to new practices and languages, rehabilitates and gives visibility to the artisanal dimension of pedagogy, lost in detriment to a certain vision of technicity, enclosed within criteria of objectivity and predictability and restricted by the trivialised recourse to stereotyped materials.

Based on the research that was developed, it was possible for us to find some lines of force that emerged in a consistent fashion, being organised around a set of characteristics, which, since they are not self-enclosed, are combined and linked to one another, giving rise to a multiplicity of situations and educational experiences.

Here, we should like to highlight three predominant aspects: a first aspect that is linked to the dimension of corporality, movement and space, which is developed by breaking away from the traditional pedagogical conceptions that prevail in the classroom; a second aspect that is linked to the new technologies, which legitimises the use of “prohibited”/“disruptive” instruments in the class, such as mobile phones and hyperlinks; and a third aspect, which is autobiographical in nature and highlights experiences of self-production and sharing, supported by different instruments, such as writing or practices inspired by cartography.

BODY, MOVEMENT AND SPACE

The body assumes a very powerful central role in various practices developed by the teachers-artist pairs. The possibility of liberating and enjoying the movements of the body is highlighted in a broad spectrum of strategies that, under the scope of the 10x10 project, are known as “corporisations” (p. 173). They have as their pedagogical intentionality to approach specific problems and concepts relating to school subjects, based on concrete experience and valuing the body as a pedagogical possibility. This type

of pedagogical work may be developed independently of the subjects or the curriculum in question, and the way in which the teachers use the body (their own and that of the students) during the lessons paves the way for new practices full of potential, in keeping with the arguments of Rossana della Costa (2009). The strategies are mobilised to attain certain objectives, both at the level of promoting self-knowledge, communication, interpersonal relationships and group cohesion and at the level of acquiring concepts and contents from specific subjects. Within the context of the 10x10 project, there are various pedagogical strategies that attribute a great central role to the space in which the students work and the different ways of exploring it. The use of space in the participating schools is dynamic and was extended beyond the physical space of the classrooms – with frequent use being made of gymnasiums, corridors, outside spaces, courtyards, stairs, etc. On the other hand, the use of the space and the materials inside the classroom and the different and non-traditional forms of arranging the space (see “Choreography for a U-shaped classroom”, p. 136) are also one of its predominant characteristics. Underlying this form of pedagogical work is the explicit intention of promoting significant experiences for the students, establishing different relationships with the space, exploring different pedagogical possibilities related with the body and with its movement in this space, being able to “untidy” and “empty” (of the tables and desks) the traditional places of school work, breaking with the formatting of the pre-established model.

In this project, we must also emphasise the fact that the use of the space expands beyond the physical limits of the internal walls of the classroom and the external walls of the school. Study visits and field trips are held to various places – courtyards, gardens, museums, fairs... – materialising this “decloistering”, bringing with it other possibilities for the pedagogical exploration of the space and the surrounding contexts of the schools. As we know, the organisation of the educational space is intentional and flexible, so that it must be adapted to the nature and aim of the educational activities.

Considering that one of the aspects defended by the “pedagogy-in-participation” is the greater value that is given to the pedagogical space as a terrain where experiences occur and learning processes are developed (Oliveira-Formosinho, 2007, 2011), it is possible to state that this concern is an underlying feature of various “micropedagogies” (p. 118) constructed under the scope of the 10x10 project.

THE TRANSGRESSIVE – “PROHIBITED” AND “DISRUPTIVE” – INSTRUMENTS

The relevance of “cultivating positive transgressions” (one of the recommendations of the 10x10 project), together with the idea that the school should be a place where one goes to find meaning and not information, are materialised in the form of strategies that make an appeal to the information technologies, to the various instruments of the visual world or to mobile phones, among many other things, which are instruments and tools that today form an integral part of the everyday life of the students and which mediate their relationship with the world.

It has become increasingly evident that the learning processes of young people – considered “digital natives” – mainly occur through the sharing of knowledge, in a collective and not in an individual way (Carrega, 2011). Young people create new languages, using words, images and movement. However, the incorporation of the mobile phone as a pedagogical tool demands new attitudes and skills on the part of teachers, who, as Ganito highlights (2009, p. 77), “have to adapt to this culture of permanent contact where learning has become, above all, a shared experience”, or, in other words, an experience based on the collaborative construction of knowledge. It is in keeping with this line of thinking that the *10x10* project assumed the use of “disruptive”/“prohibited”/“penalised” instruments as a strategy of positive transgression, openly exploring the potentialities deriving from the use of mobile phones and other digital equipment within the classroom context (see “Forum”, p. 168). These pedagogical proposals of the *10x10* project resort to the use of hyperlinks, to the sending of text messages, videos and recordings made by mobile phones, among other devices. They mobilise as resources the computer, programmes used for editing video and sound, the Internet, photographic cameras, film cameras, mobile phones, sound recorders and systems. Observing the expansion of the school space and the need to think about new possibilities for new times, Melchiorretto and Kraemer (2015, p. 7) consider the emergence of “a perspective that can transcend the school walls, break the control mechanisms by transforming the use of mobile tools into a strategy for the decentralisation of teaching.”

PRACTICES OF SELF-TRAINING AND HETERO-TRAINING IN THE SCHOOL CONTEXT

In the pedagogical strategies developed under the scope of the *10x10* project, we find the use of *autobiographies* and *cartographies*, with the aim of promoting self-knowledge in students, the construction of the self and an awareness of others.

The strategies of an autobiographical nature mobilised under the scope of the *10x10* project use a variety of resources – handwritten letters, family histories, photographs, images, writing material, mirrors... – seeking to increase the potential for self-knowledge and the discovery of the self, valuing one’s own world and the life path that one has developed (see “Autobiographies”, p. 162). Individual experiences are shared through the construction of intersubjectivity, reinforcing interpersonal relationships. Besides promoting questioning of a philosophical nature (“who am I?”), they seek to develop skills through the production of texts of a biographical nature, besides the skills needed for the interpretation of poems, photographs and images. In this way, poetry, music, images, the theatrical staging of events, among others, constitute the terrain for the revelation, (re)construction and sharing of identities.

In the same way, cartographies enable the construction of the self and the *creation of worlds* (Panella et al, 2015), through the construction of maps and the mapping of one’s affections and emotions. The groups “construct their own worlds”, take ownership of their surroundings poetically and aesthetically, expressing their perceptions about their “local”

place, linked to a whole, creating new relationships with reality. Under the scope of the *10x10* project, various pedagogical strategies are mobilised with this aim (see “Cartographies”, p. 129). Cartography is a way of inhabiting territories, constructing an experiential and unique space that implies an idea of experience understood as a space of unpredictability from which one emerges transformed. In this sense, it operates a shift, a disturbance that touches modes of existence, processes of self-invention and of inventing the world, producing ways of looking and forming knowledge that are implied (Rolnik, 1987) – and not merely applied – for it operates through the exposure of oneself and one’s affections (Kastup, 2008).

In overall terms, and in close keeping with the intentionality of the *10x10* project, we note that the pedagogical strategies developed by the teacher-artist pairs are inspired by artistic practices, making use of different languages and forms of expression, such as music, dance, calligraphy, drama or film, creatively mobilising the body, the voice, the movement, the space, among others, and rehabilitating different types of pedagogical instruments and tools, some of which are almost “forgotten” and others which are also “forbidden”.

Throughout the study that was undertaken, we took care to identify the main dimensions of the *10x10* project as a formative experience, understanding experience in its complex and globalising sense (Larrosa 2002, 2011).

In a more summarised form, we highlight some of its most relevant dimensions (see Pires, Gonçalves and Gomes, 2015), which, because of their transversal nature, have significant implications at the level of the training process, from the perspective of both the teachers and the students.

These main dimensions were:

- *The space-time dimension, linked to the contexts/spaces/times of learning and the construction of knowledge. As far as the teachers are concerned, this has to do with their own work situation, mobilising the principles of training “in a context”, based on real situations, problem solving and the construction of shared strategies; the school is simultaneously a working and training context, in which formative experiences arise that can contribute to personal, professional and organisational development (although the last of these did not have a greatly significant expression in the 10x10 project).*
- *The pedagogical dimension, through the conception and design of active and collective pedagogical strategies that are participatory in nature and contribute to the students’ development in various dimensions (cognitive, socio-affective and relational, etc.) and to the construction of significant learning processes that have and produce meaning for those who are learning. The nature of the pedagogical experience opens up the possibility of introducing an epistemological and aesthetic order into the classroom, which enables the interruption of objectifying or standardising logics.*
- *The relational dimension, through the construction and development of new professional relations based on horizontality and equality and not on the expertise of the trainer (Gonçalves and Gomes, 2014): the creative partnerships with the artist, the openness to new forms of relationship with and between the students and*

with the educational community. It should be noted that the formative experience provided by the 10 × 10 project is profoundly democratic, because of the way in which it values the individuality and singularity of its participants (teachers, artists, students, and the FCG team).

— The identity dimension, linked to the change in the teachers' educational concepts, with their becoming aware of the contributions made by the project, the feeling that they are developing skills and professional practices that can strengthen their self-esteem and self-image and contribute to the changes taking place in terms of their identity.

— The epistemological dimension, which emerges from the interdisciplinary comparison that is being made between subjects, through the construction of a transdisciplinary "knowledge for action", which can be used to mediate between different rationalities, both theoretical and practical. Knowledge is constructed collectively, through experimentation and reflection, in a shared and cooperative fashion – between teachers, artists and students.

III TO WHAT EXTENT CAN THE 10 × 10 PROJECT BE RECOGNISED AS A UNIQUE PROJECT CON- STRUCTED IN DISCONTINUITY WITH OTHER FORMATIVE PROPOSALS?

The analysis of the 10 × 10 project enabled us to question the models currently being used for continuous teacher training and the professional development of teachers in regard to their contribution to improving student learning, strengthening the professionalism of teachers or enhancing the informal dynamics in training experiences (Gonçalves and Gomes, 2014). Basing ourselves on the typology proposed by Sachs (2009) for the models to be used for the professional development of teachers, our criticism of the traditional models focuses on the way in which some of these training proposals tend to promote individualism, neglecting the collaborative dimension of the teacher's work, as they tend to standardise and technify teachers' practices, taking their autonomy away from them and neglecting the pedagogical and political dimension of their work.

These models produce forms of mastery and control that are geared towards pre-established ends configuring pre-determined forms of professionalism, based on a relationship of externality with knowledge – resulting in an objective and hierarchical knowledge that is external to the subject that possesses it.

In contrast, some of the central characteristics of the 10 × 10 project open up other possibilities for thinking about teacher training, namely with regard to the promotion of collaborative work between teachers and artists and the consequent opening up of unforeseen and unforeseeable spaces for dialogue and reflection, promoting the implementation of pedagogical strategies ("micropedagogies") that single out and materialise the creative dimension of the teacher's work, making it possible to denaturalise established practices and go beyond individualistic understandings of teaching practices. The analysis of the perspectives expressed by the participating teachers with regard to the training offered by the 10 × 10 project reinforced our initial reading of the situation, since most of those who responded to the questionnaire said that they did not find any similarities between the 10 × 10 project and previous training experiences, valuing the project's interdisciplinary and collaborative nature and the fact that it was based upon languages and processes of artistic creation. The opening up of the training experience to unpredictability and the

full involvement of all the participants in the process are aspects that were mentioned by the teachers taking part and which clearly reinforce the uniqueness of the 10 × 10 project when compared with other training proposals.

We consider it important to identify and give visibility to the intention(s) underlying the pedagogical action, making it possible to understand the concepts, principles and values that guided this project. As Uberti (2013) points out, we are currently confronted with the limits and weaknesses inherent in the existence of a *non-relationship* between the educational intentions and teaching processes of the school as an institution – the way in which the school is organised and works in order to achieve established pedagogical objectives – which are hidebound by the discourse of rationality and predictability on which educational intentions are founded.

First of all, we base our thinking on the idea that pedagogical intentionality can be understood as the implicit aim in a certain conscious action that is structured and developed for a particular purpose, in a certain pedagogical context – in a certain space-time, with a pre-determined group of people (and not one that is specifically chosen) and with a set of pre-defined subject-matters – constituted by the relationship established between those who are teaching, those who are learning and the knowledge that circulates between them. However, as Morin (2000, p. 90) highlights, we are aware that "no action is assured of working in the direction of its intention", so that we accept the challenges inherent in the very uncertainty of the action itself, which implies our also being aware of unpredictability and the need to mobilise strategies in detriment to programmes ●.

In view of the reflections that have been pointed out above, based on the empirical research that was undertaken, we sought to find the answer to the question of what the pedagogical intentions of the 10 × 10 project are. One of the main intentions has to do with the creation of environments and atmospheres that facilitate the students' learning processes, by increasing their motivation, attention and other attitudes that promote learning, their potential being increased by the construction of groups that foster the interpersonal relationship and the acquisition of knowledge and specific curricular contents. This pedagogical intentionality is clearly visible in the different documents produced by the 10 × 10 project – for example, in the record sheets of the micropedagogies conceived by the teacher-artist pairs; in the Notebooks of the Public Lessons. We also noted that this intentionality was to be found in the way that the spaces were organised, the times were managed, the teaching/learning strategies were conceived and the relationships were established between the teacher/educator, and the student/pupil and the knowledge acquired, given the flexible way in which these roles were defined and assumed throughout the course of the 10 × 10 project.

As was defended by Paulo Freire (1996), the teaching/learning process cannot be understood in the light of a "banker's" vision of education, based on a transfer of knowledge between a holder of that knowledge (teacher) and a receiver of that same knowledge (student).

IV WHAT INTENTIONS LAY BEHIND THE EXPERI- ENCES OF THE 10 × 10 PROJECT?

● Unlike the programme, strategy "elaborates a scenario of action based on an appraisal of the certainties and uncertainties, the probabilities and improbabilities of the situation. The scenario may and must be modified according to information gathered along the way and hazards, mishaps or good fortune encountered." (Morin, 2000, p. 90).

V
WHAT IS THE
NATURE OF THE
RELATIONSHIP
ESTABLISHED
BETWEEN
ARTISTIC
PRACTICES AND
PEDAGOGICAL
PRACTICES?

● Educational materialities need to be worked upon. Not only educational ideas, but also educational materialities. The architecture of schools, for example, or pedagogical objects (the things that are used for teaching), the gestures of education, the times and spaces of education, bodies in education, the mechanisms of education (taking the word “mechanism” to mean a way of organising, arranging or composing spaces, times, materialities, knowledge, bodies, languages, etc.) This involves turning thought into a question not only of intelligibility, but also sensitivity. (pp. 5-6) (Translation by John Elliott)

Quoting the pedagogue in this respect: “There is no teaching without learning, they explain each other, and the subjects, despite their differences, are not reduced to the condition of being objects of one another. Whoever teaches learns in the act of teaching and whoever learns teaches in the act of learning.” (Freire, 1996, p. 12)

The intentionality of this proposal is not based on the transfer of knowledge, but instead on the creation “of the possibilities for its production or construction” (Freire, 1996, p. 12). At the same time, the relationship of cooperation and partnership that it was intended should be promoted between teachers, artists and students was based on democratic principles, on the respect for each other’s knowledge, on the expression of uniqueness, diversity and multiplicity, in detriment to the hierarchical structuring of roles and functions.

This question guided a central part of our research work. One of the key ideas that emerges from our analysis of the way in which the *10x10* project was developed is that there is a strong isomorphism between the design of the training programme and the pedagogical experiences set in motion by the various pairs of teachers and artists. This isomorphism lies in the opening of a space-time for *collaborative work*, which is characterised by the experiences of *bricolage* (defined above on the basis of Paley’s works) and *interdiscursivity*.

For various authors, collaborative work amounts to more than a practice, a philosophy and an ethic: it is a more democratic way of working, insofar as, by being more supportive and less competitive, it assumes a greater willingness to help the other, promoting a greater openness and a better interpersonal relationship (Fullan and Hargreaves, 2000; Roldão, 2007; Damiani, 2008; Freire, 1997; Nóvoa, 2008). The commitment to the construction of collaborative relationships was a feature that cut across the whole of the *10x10* project and we found various examples of this in the relationships of the teacher-artist pairs, in the relationships between this pair and the students, as well as in the relationships between the various actors involved in the *10x10* project, as can be noted in Gomes, Pires and Gonçalves (2016).

The concept of interdiscursivity is based on the conjugation of distinct languages and discourses for a better understanding of the educational phenomenon and of human capacities (Gonçalves, 2008). With its origin in post-structuralism, interdiscursivity deals with the way that discourses intersect with one another, are juxtaposed and intertwined. Underlying the idea of interdiscursivity is the view that all discourses function according to a logic that is based on their relationship with or opposition to other discourses (Davis and Sumara, 2005). As we previously argued, interdiscursivity is a central characteristic in the relationship between the artistic practices and the pedagogical practices experienced in the course of the *10x10* project (Gomes, Pires and Gonçalves, 2016).

In fact, the working processes that were set in motion were not intended to publicise artistic movements, works of art or specific authors, nor even to use art as a tool for expanding the means of expression of children and young people. They were, instead, designed to make the educational event possible through the *interruption* (in the sense constructed

by Biesta, 2006) of bureaucratic and standardised dynamics, through the construction of a certain *bricolage*. What therefore happened was an opening of cracks in the pedagogical work, provided by the artistic action, and leading to exercises of liberation: pedagogy freed itself from the shackles of pre-defined outcomes and became available to provide formative training experiences, in the sense that is attributed to them by Larrosa (2013); the teachers freed themselves from the automatic didactic methods used for the teaching of their subject; the artists freed themselves from the association between their practices and their art work; and the artistic practices were themselves freed and placed at the disposal of the students.

In his historical analysis of the infancy of the vanguards, Bordes (2007, pp. 20-21) defends the evidence that the teaching vocation is habitually accompanied by the creative vocation. Among other considerations, the author situates and defines the figure of the *teacher-lecturer* (the one whose work is not made public and is restricted to the classroom) and the figure of the *teacher-lecturer-author* (who writes about and publishes his or her pedagogical experiences).

In contrast to the industrialisation of the didactic objects of immediate consumption that tend to invade the schools and the classrooms, the pedagogical experiences of the *10x10* project made it possible to highlight the artisanal dimension of pedagogy (the act of doing, the inventing of ways of teaching, revaluing routines and materials, objects and spaces), together with the relational dimension (the sharing with other professionals, team work, self-knowledge, the knowledge of the students, the construction of a community). They also made it possible to achieve ways of fulfilling one of the rules of the pedagogical life as defined by Larrosa (2015):

Il est nécessaire de travailler sur des matérialités éducatives. Pas seulement sur des idées éducatives mais aussi sur des matérialités éducatives. Sur l’architecture des écoles, par exemple, ou sur les objets pédagogiques, les choses qui sont utilisées pour enseigner, sur les gestes de l’éducation, sur les temps et les espaces de l’éducation, sur les corps à l’éducation, sur les dispositifs de l’éducation, si l’on prend le mot dispositif dans le sens de façon de poser, ou de disposer, ou de composer les espaces, les temps, les matérialités, les savoirs, les corps, les langues, etc. Il s’agit de faire de la pensée non seulement une question d’intelligibilité, mais également de sensibilité. (pp. 5-6) ●

The collaborative work and the interdiscursive nature of the experiences developed in the course of the *10x10* project address the technical rationality within which the teacher’s *profession* has developed, as well as the artistic and authorial rationality that has been the hallmark of the artist’s *profession*. The writing of this book and the various working mechanisms used under the scope of the *10x10* project, namely the public lessons, made it possible to fix the pedagogical work beyond the time and space of the class(room), combining art and pedagogy in the construction of ways of acting, experiencing and disseminating pedagogy. It made it possible to extend the idea of the author, from the artist to the teacher,

from the individual to the partnership and collaborative work, leaving this question open and unanswered: “What is an author of pedagogy?”

Following a logic of “creative partnerships”, as embodied by the teacher-artist pairs, who conceived and implemented learning strategies in the classroom with the students, the project was organised around a community of people who constructed something together, in a collaborative fashion, promoting multiple learning processes, constructing different forms of knowledge and (trans)forming identities.

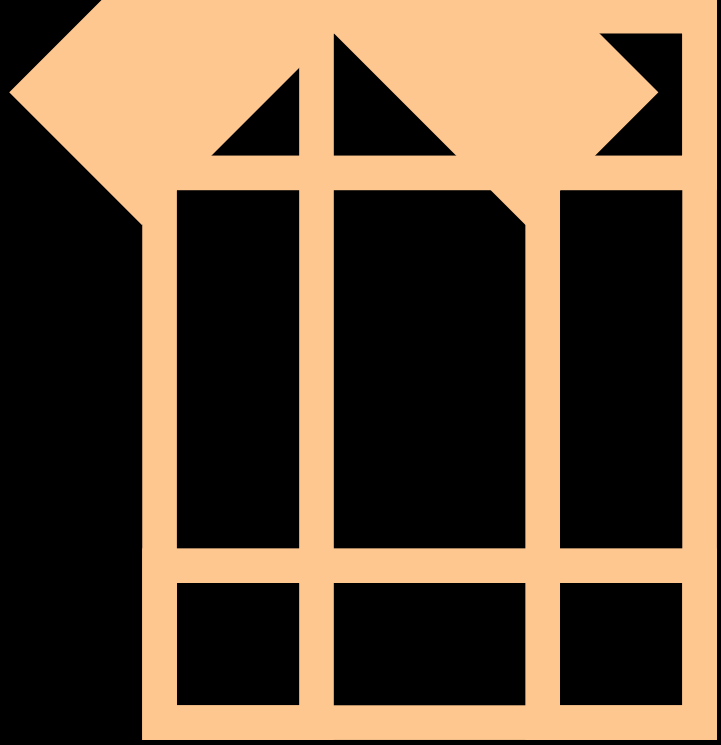
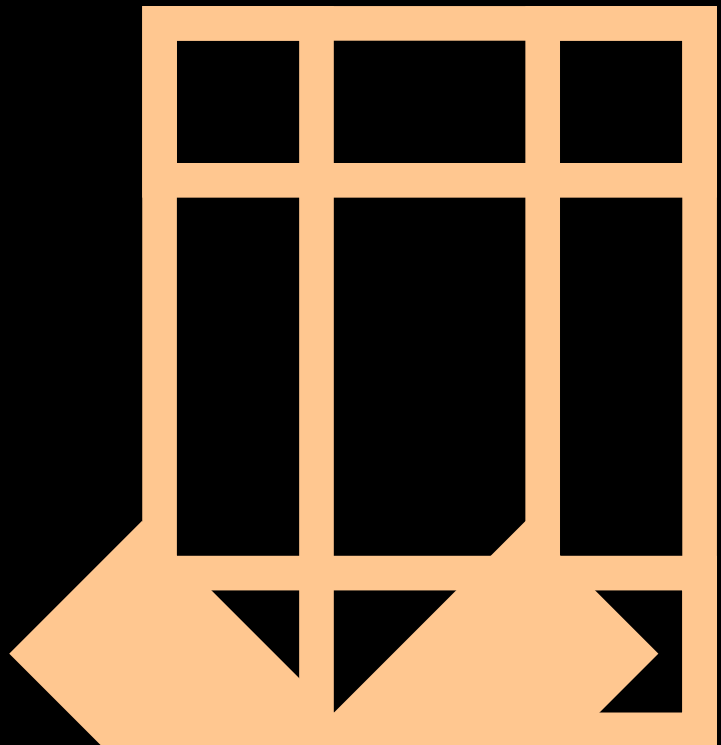
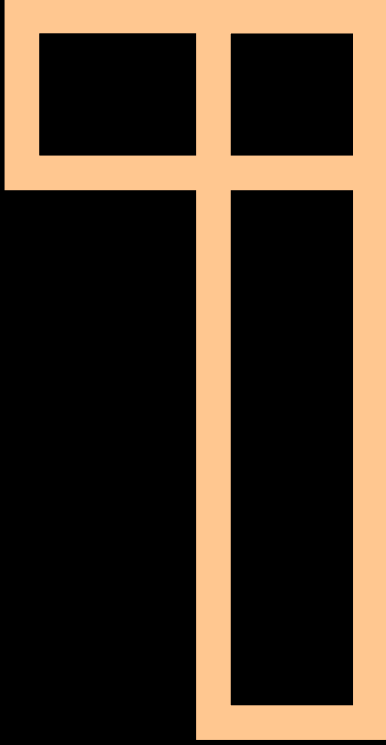
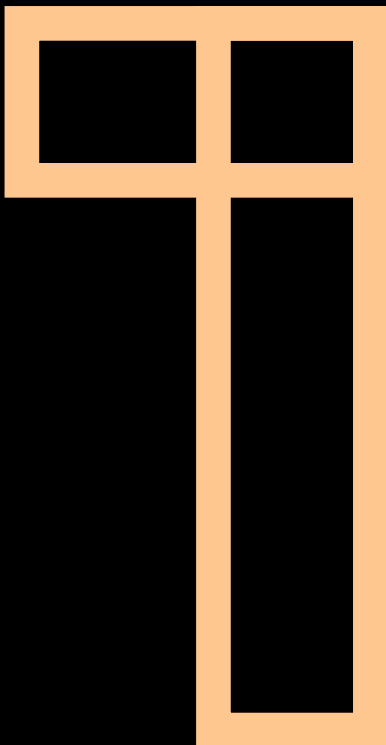
The pedagogical proposals developed under the scope of the 10x10 project were based on an educational concept that awards experience a fundamental place, insofar as they seek to provide experiences of globalising and integrating spaces-times for (trans)formation, through the interactions and transactions that are established within the groups themselves. These experiences occur in a multiplicity of registers: sensorial (appealing to the senses) and logical and rational (mobilising frames of reference, appealing to reflection), contributing to the development of frameworks for thinking and acting, as well as multiple skills and competences.

One of the basic conditions of this work is its bold and constant rebellion against practices that crystallise and capture life and the world in the actions, procedures and everyday relationships of the school, imprisoning the individuals and forcing them to adopt naturalised ways of thinking and acting. The space of creation opened up by the 10x10 project may correspond to a process of producing multiplicities that makes it possible for the thinking and ways of doing things at the school to become inventive and sensitive processes that enable people to experience new ways of living in a community and conceiving and planning their actions in a way that is more open to others. This path is constructed in the collaborative work performed between teachers and students, researchers and artists, thinking and planning together so that we can invent possible new worlds that we can share with one another.

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Micropedagogies

I
Constructing groups and interpersonal relationships

(icebreaker, rituals for beginning and ending the lesson, games/group activities)

123 **I 1**

Identities

- 1.1. I identify with...
- 1.2. Icebreaker with objects
- 1.3. If I were... I would be...
- 1.4. Family photos
- 1.5. The furthest, the nearest
- 1.6. Body-signature

128 **I 2**

Complicities

- 2.1. The shoal game
- 2.2. Stop in movement
- 2.3. Game of imitating gestures/movements

128 **I 3**

Between the self and the other

- 3.1. Change places whoever.....
- 3.2. *Magnetic* campuses

130 **I 4**

Cartographies

- 4.1. Mapping the self
- 4.2. Body-silhouette
- 4.3. Mapping a self-portrait

132 **I 5**

Synergies

- 5.1. Human chain
- 5.2. Water bubble

II

Promoting attitudes of motivation, attention and concentration that facilitate learning

(exercises in concentration, memorising, active listening and relaxation)

135 **II 1**

Rituals

- 1.1. Security rituals
- 1.2. Pieces of paper
- 1.3. Choreography for a U-shaped room
- 1.4. Ritual for beginning and ending a session
- 1.5. Questions give birth to questions
- 1.6. Imagining to question
- 1.7. Today I learned that...

140 **II 2**

Awakenings

- 2.1. Stretching
- 2.2. Silence
- 2.3. Ball game
- 2.4. Copacabana!

143 **II 3**

Making the invisible visible

- 3.1. Manifestos
- 3.2. The signaller of knowledge

145 **II 4**

Group evocations

- 4.1. Counting and enunciating as a group
- 4.2. Game of mathematical operations
- 4.3. Mantra
- 4.4. Game of the sound conductor
- 4.5. Word volcano

148 **II 5**

Game of sequences

- 5.1. The addition game
- 5.2. The memory game

II 6

Perspectives

- 6.1. In what way does this contribute to my happiness?
- 6.2. The life of a line
- 6.3. Drawing with eyes that see
- 6.4. The conversation of others

II 7

Focuses

- 7.1. Divisive images/binding images
- 7.2. Gallery of scientific images
- 7.3. *Ridikulus articulatis*
- 7.4. Whisperer

III

Facilitating the learning of subject/curricular contents

(glossary, writing exercises, exercises with the body and space, appropriation, negotiation and argumentation)

III 1

Thought machine

- 1.1. Poetry machine
- 1.2. Undying body
- 1.3. Undying body with connectors
- 1.4. Text message tales

160 **III 2**

Glossaries

- 2.1. Word glossary
- 2.2. Invented words
- 2.3. Chemistry glossary
- 2.4. Biological and everyday glossary
 - 2.4.1. Handkerchief game
 - 2.4.2. Hangman

163 **III 3**

Autobiographies

- 3.1. Series of writing exercises
- 3.2. True or false
- 3.3. Individual letter
- 3.4. Short autobiography
- 3.5. Autobiography
- 3.6. A letter to oneself
- 3.7. Family stories

165 **III 4**

Recitals

- 4.1. Thematic recitals
- 4.2. Space and poetry
- 4.3. Poem choirs
- 4.4. Reciting poetry aloud
- 4.5. The power of poetry
- 4.6. Word fight
- 4.7. Phonetic notation
- 4.8. Medievalisations – twentieth and twenty-first-century poetry

169 **III 5**

Forum

- 5.1. *QR Code (Quick Response Code)*
- 5.2. Journey to my homeland
- 5.3. Our subject would make a good film
 - 5.3.1. Our trailer
 - 5.3.2. Film with photographs
 - 5.3.3. Film with mobile phone
- 5.4. Talking stick
- 5.5. Simplified retelling of classical stories
- 5.6. Dinner... after gleaning at the Taipas Market

174 **III 6**

Corporisations

- 6.1. Paramecia
- 6.2. Meteoric dynamic
- 6.3. Making the invisible visible
- 6.4. The cake
- 6.5. Do you think you can stay stable?
- 6.6. Emission/Absorption
- 6.7. Distribution of electrons: the Bohr model versus the present-day atomic model
- 6.8. Vectors
- 6.9. Symmetry/Mirror
- 6.10. Clothesline
- 6.11. Symbolic simplification

180 **III 7**

Diaries

- 7.1. Polyphonic graphic diaries
- 7.2. Field notebook
- 7.3. Diary of unusual events
- 7.4. My notebook
- 7.5. Anthology

183 **III 8**

Map/Score of OTS (Objects that tell stories)

I

Constructing groups and interpersonal relationships

Icebreaker
Rituals for beginning and ending the lesson
Games
Group activities

122 123

I 1

Identities

Characteristics of the situation/ problem for which the strategy was conceived

Presentation of the students and the teacher at the beginning of the school year. Inhibition and shyness of the students about exposing themselves and about interpersonal relationships. Difficulty of acceptance by and consolidation of the group.

Intention/aims

To make oneself known to the class members; to look for affinities and a predisposition for sensing the group's cohesiveness. To facilitate the student's presentation and communication through biographical dynamics and self-analysis. To take ownership of one's body and the space.

Resources used

Images, photographs, objects. Computer, projector, photographic camera, mobile phone.

Sources/references used in the construction of the pedagogical proposal

Icebreaker dynamics. Influence

of the horizon of theatre, illustration and painting. Dance at the Tanzfabrik Berlin in 1989/1990, with Dieter Heitkamp, Benno Voorham and Howard Sonenklar.

Syllabus contents worked upon

The structure of communication and the capacity for argumentation. The autobiographical text. Phonology: the prosodic level. Philosophical questioning, focus on the question: "Who am I?"

General description of the activities

Exercise that, by exploring dynamic and visual forms, seeks to combat the fragility that characterises the moments of individual presentation at the beginning of the school year, as well as the lack of the feeling of belonging to a group. It is through this guiding thread that privilege is given to the use of objects and forms that indirectly reveal information, in an attempt to reduce the initial resistance and promote the cohesiveness of the class.

1.1. I identify with...

The teacher presents the group with a sequence of diversified images, projected twice. In silence, each student selects an image through which they wish to present themselves. This presentation takes place individually and must include a justification of why they chose that particular image.

1.2. Icebreaker with objects

As in the previous proposal, this presentation activity also starts with a material support, namely a truly personal object that is relevant in the history of the student's life. Once again, they must justify their choice.

Note

When it is impossible to present an object in the classroom, the students may bring an image of the same thing or just explain it.

1.3. If I were... I would be...

This activity determines the student's initial presentation according to certain criteria. Various categories are proposed that challenge each student to reflect upon themselves, reflecting their wishes and their ideals.

Examples

- If I were an animal, I would be...
- If I were a colour, I would be...
- If I were a verb, I would be...
- If I were a number, I would be...
- If I were a plant, I would be...
- If I were an object, I would be...
- If I were a feeling, I would be...
- ...

Suggestion

The students may also justify their choices, developing their communication and argumentation skills. They can also appeal to their memory, referring to their ability to recall the answers that they presented.

1.4. Family photos

Seeking to foster the spirit of belonging to the group, the strategy is adopted of constructing something similar to a photo album that is gradually composed in the course of the school year. The concept of *family* that provides the title of this micropedagogy refers precisely to the group, to the importance of the class's feeling of unity, of mutual cooperation and of constituting a whole. The photographs should be taken at different moments during the year and always using the timer, so that all the members of the class are included in the image and are proud of it (including the teacher). Here, the position, the lighting and the framing of the photograph are factors that should be taken into consideration. It is also important to look for the variations that appear in the different photographs, and which may be suggested by the students or inspired by the topic that is being taught.

Suggestion

Give an exercise in which the solution to the problem is then mirrored in the family photo. When the class is about lethal doses of certain chemical substances, an exercise can be given, in which, in the calculation, the student survives (or doesn't survive) the administration of a certain dose. When we take the photograph on that day, he or she will have to use their body to express the result of that calculation – either they fall down dead or are standing and alive. This type of interaction between contents and micropedagogies helps to instil the habit of strategies of this type, both for students and for teachers.



Family photos

1.5. The furthest, the nearest

This exercise comes from the world of dance and is divided into four separate moments. In each of them, the students move around an empty room, occupying the space in a balanced fashion. It is in this context of constant movement (walking around the space), and secret choices, that the following challenges are proposed:

- Choose a member of the group and, on a sign from the teacher, keep as far away from them as possible without using your hands.
- Choose another member and, on a sign from the teacher, keep as close to them as possible, also without using your hands.
- Choose another two members and, when the sign is given, keep as far away as possible from one of them and as close as possible to the other one, again without using your hands.
- Again choose another two members and, on a sign from the teacher, keep as far away as possible from one of them and as close as possible to the other, but, on this occasion, with the particularity of being able to use your hands to perform this task.

1.6. Body-signature

The proposal made by this exercise is to use the body as a tool for drawing the signature of each member of the group. This means that by resorting only to corporal expression, gesture and movement, everybody is invited to physically sign their name. This exercise requires people to be standing up and in an empty room. The participants begin by trying to draw with every part of their body, except their hands, using their shoulders, nose, elbows, bottom, back, feet, knees and other limbs/organs. They first explore different properties of movement (weight, amplitude, time), as well as different levels and planes in the space (ceiling, floor, wall...). The teacher can exemplify the procedure by drawing circles, numbers, letters, but only with the purpose of encouraging the group to freely explore their own drawings and designs. When they are comfortable about doing this, each student signs their name with their body, including previous explorations of this possibility. At the end, impressions are shared about the experience.

Suggestion

It can also be requested that the signature should demonstrate the participant's mood at that time.

Complicities

Characteristics of the situation/ problem for which the strategy was conceived

Reducing resistance to interpersonal relationships, strengthening the feeling of group identity.

Intention/aims

To expand the relationship of respect and cooperation.

To contribute to the formation of a group. To develop cooperative work and experiment with different forms of positioning, especially leadership. To work on physical proximity and motor coordination.

Resources used

Scenery paper, writing material of various colours. Photographic camera. Music.

Sources/references used in the construction of the pedagogical proposal

Inspired on other dance exercises.

Syllabus contents worked upon

Social roles; intragroup and intergroup dynamics.

General description of the activities

Using the dynamics of body movement and physical contact, the strategies presented below reveal as their fundamental concern to establish relationships of proximity and cooperative work, resorting, for this purpose, to the attribution of different roles and responsibilities to the members of the class.

2.1. The shoal game

Being concerned with the group spirit, team work and leadership, this activity is developed through the transformation of small groups of people (between five and seven) into small shoals. In an empty room, each shoal establishes a route that it will follow under the guidance of a leader. Each member of the shoal will experience the position of both leadership and obedience. Once the route has been completed, it is suggested to each group that they should draw a flow chart of the movements that they made. On this map or chart, they must also mark situations that were particularly important, because of either their negative or positive nature. The maps are then presented to the class.

Suggestion

If one of the members of the group is left outside, with the aim of photographing the flow of the groups in the course of their journey, this will make it possible to record the degrees of cohesiveness of the shoals during the exercise.

2.2. Stop in movement

Combining three complementary moments, this activity is centred on the freedom of corporal expression and on the importance that the

physical touch assumes in the process of approximation and trust between the members of a group. It begins in an empty room, with the class arranged in a circle, experimenting different types of movement (continuous, slow, rapid, intersecting...) and using various planes (on the floor, crawling on hands and knees, medium, high and jumping).

2.2.1.

The first proposal consists of moving until they hear the word “stop” uttered by the teacher. At that moment, they must stop, freezing in that position, and only beginning to move again when they hear the order to do so, with the words “carry on”. After a few stops performed in this way, the order to “stop” begins to be determined by any student who feels the impulse to give the command (it is important to consider that only one member at a time can utter the word “stop”). The order must be heard by everyone; a certain sensitivity must be used to choose the right moment.

2.2.2.

In the second phase of the exercise, the “stop” occurs whenever the participants touch one another accidentally, and the dance can begin again after a brief pause of roughly five seconds.

2.2.3.

Following on from the previous exercise, the members of the group stop for five seconds after the accidental touch, but, when they start their movement again, the one who did the touching must copy the movements of the person that they touched, although the former is now required to keep at a distance from the latter.

2.3. Game of imitating gestures/movements

Designed for the reproduction of movements – and simultaneously calling for concentration and motor coordination on the part of the students – this activity can be used as a warming up procedure or as a strategy for developing the lesson. This game is first demonstrated by the teacher, who asks the class to replicate his or her gestures. Next, it is established that the customary alignment of the tables will define the work groups for the second phase of the exercise. Each row corresponds to a group, and its first member is given the role of leader. Their task is to make slow, continuous and contrasting gestures, mainly using their arms, hands, head and the upper part of their body. Those who are being led are given the task of reproducing these same movements.

Suggestion

The playing of background music with a dramatic tune allows for the simplicity of the gestures that are reproduced to become open to different readings.

Between the self and the other

Characteristics of the situation/ problem for which the strategy was conceived

Reducing embarrassment about individual exposure. Difficulty in consolidating the group and affording it a common identity.

Intention/Aims

To help in making the identification between the self and the other through actions of sharing, intimate and friendly atmospheres, equal circumstances and collaborative work. To create spaces of freedom for the students to express themselves and expose themselves to their own self and to the group.

Resources used

Chairs.

Sources/references used in the construction of the pedagogical proposal

References to the theatre context. Dance exercise by Dieter Heitkamp.

Syllabus contents worked upon

Autobiography. Attitude of philosophical and reflective questioning about the self.

General description of the activities

In view of the natural difficulty that characterises exposing oneself and forming a relationship with others, particularly notable in fragmented or newly-formed classes, the strategies presented here are designed to overcome inhibitions/prejudices and, in this way, lead to the students sharing their identity in a dynamic and liberating fashion.

3.1. Change places whoever.....

The students sit in a circle and, outside it, the teacher issues the first instruction, which, just like all the following ones, will always begin with the words: "Change places whoever.....", followed by its complement. For example, the teacher can begin with the order "Change places whoever was late for school today", and, in response to this, the students who identify themselves with what is said must swap places randomly with one another. The exercise continues following this same structure. However, it is most important that the instructions given by the teacher become progressively more complex, personal and revealing.

Examples:

- Change places whoever... has done something forbidden.
- Change places whoever... has a secret mania.
- Change places whoever... has confidence in themselves.
- ...



Change places whoever.....

Note

It is recommended that this activity should end with the production of instructions by the students themselves, since this will be symptomatic of their capacity to intervene and to take ownership of the game.

3.2. Magnetic campuses

"Magnetic campuses" is a game that is characterised by the fact that it consists of two polarising answers – *yes* and *no* – which are attributed to opposite corners of the room. As the group circulates naturally within the empty space, the teacher throws out questions whose answers will be either positive or negative for each student. Depending on their choice, the students should then run to the corner that corresponds to their answer. It is fundamental for the success of the exercise that the questions should become progressively more profound.

Examples

- Those who like sweet things go to X; those who don't go to Y.
- Those who still have grandparents go to X; those who don't go to Y.
- Those who like themselves go to X; those who don't go to Y.
- ...

Cartographies

Characteristics of the situation/ problem for which the strategy was conceived

A reduced critical attitude, with little questioning or reflection. Difficulty in revealing themselves personally. Lack of feelings of belonging and of autonomy within the group.

Intention/aims

To develop the capacity for analysis and self-analysis. To create the awareness of oneself and to promote a knowledge of others. To work on self-exposition, valuing it; to express features of one's own identity in a visual and graphic manner. To overcome prejudices and established barriers.

Resources used

Scenery paper, writing material of various colours, glue, sellotape, images. Overhead projector or

another piece of equipment with a spotlight.

Sources/references used in the construction of the pedagogical proposal

References to Geography and Drawing. Inspired by Lourdes Castro's sculptural work.

Syllabus contents worked upon

Cartography. The autobiographical text. Philosophical questioning and a focus on the question: "Who am I?"

General description of the activities

Rooted in reflection about the *self* and in the relationship between the *self* and the *other*, the following activities make use of cartography as an instrument that can help students become aware of themselves and others.

4.1. Mapping the self

The teacher begins by explaining the purpose of the cartography, afterwards making the suggestion that each student should draw a map of their own self, causing themselves to be drawn in a physical position with which they identify. For this purpose, each member must be given a sheet of scenery paper, which will be laid on the floor and on which the student then lies down, choosing the position that best characterises them, while another colleague draws the outline of their body on the sheet. This moment of mutual cooperation provides proximity and, ultimately, physical contact that generates an atmosphere of respect and cooperation. After the physical outline has been drawn, the sheets should be arranged vertically in visible places.

Suggestion

The students can fill in their maps with the elements that they believe serve to define their identity (personal characteristics, wishes...) and which they consider important (favourite animal, memories...).

4.2. Body-silhouette

Adopting the same logic as in "Mapping the self", this pedagogical strategy proposes only some slight alterations. Although it also involves the drawing of the outline of a student's body by a classmate, the sheet is placed vertically and the body posture no longer arises from the student lying down on the scenery paper, but instead depends on the light source (for example, an overhead projector), which, by shining on the body, makes it possible to project its shadow/silhouette. Other biographical information can be recorded on the surface of this "map".

Suggestion

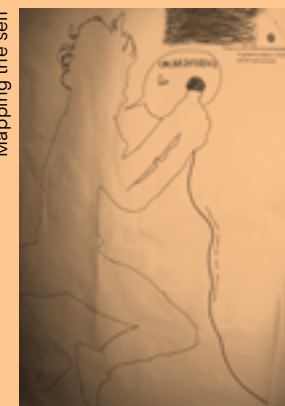
Symbolise body organs and write thoughts, but in different places of the body, according to the areas of the body where they are felt; signal areas of weakness/strength; draw relevant symbols; fears...

4.3. Mapping a self-portrait

While it is similar to the preceding exercises – regarding the aim of producing an individual and personalised map of the self – this exercise does, however, present some variations. In this activity, it is proposed that the students should work individually on their self-portrait on the sheet of scenery paper, so that, in this case, the outline of their body is not introduced by another person. It is also suggested that the students work on texts written by authors that have already been analysed in class and write their own fictional story that combines precisely the self-portrait of the cartography and the contents of the text.



Mapping the self



Synergies

Characteristics of the situation/ problem for which the strategy was conceived

Gaps in the cohesiveness of the group and the respective sense of identity. Weakness in interpersonal relationships. Restlessness and anxiety in the class.

Intention/aims

To produce cooperative work, highlighting the attempts to strengthen the group feeling, the experience of unity and the feeling of belonging. To develop concentration and creativity. To calm the class down.

Resources used

Music.

Sources/references used in the construction of the

pedagogical proposal

Inspired by street games that work on the theme of connections. The choreography and dance plan is by Hemmanuelle Huyn.

Syllabus contents worked upon

Group dynamics and interpersonal relationships.

General description of the activities

Being based on the use of the body, the proposed exercises operate as instruments that seek to bring the individual forces together and convert them into one collective centripetal force. They lead to the coming together of each of each of the group members and the formation of one single united whole.



Human chain

Micropedagogies

5.1. Human chain

This activity involves the class being in an empty room. Holding hands and forming a circle, the group members must move in an attempt to abandon the vertical position. Bumping into one another, crossing over one another, drawing different shapes and experimenting with various planes (on the floor, crawling on hands and knees, medium, high and jumping) and different types of movement (continuous, slow, rapid, intersecting...), they must make sure that the human chain is never broken.

Suggestion

In the first phase, any member of the group who breaks the chain is excluded. In the second phase, the group can try to find a way to reintegrate that member into the group, on condition that they do not let go of each other's hands.

5.2. Water bubble

In an empty room and without letting go of each other's hands, the group must move together and slowly, producing very gentle, continuous and slow movements. The activity ends when everyone is close together and, like spaghetti, they allow themselves to become soft until they reach a horizontal position and are comfortable.

II

Promoting attitudes of motivation, attention and concentration that facilitate learning

Concentration
Memorising
Active listening
Relaxation

II 1

Rituals

Characteristics of the situation/problem for which the strategy was conceived

Difficulties of communication, questioning, critical reasoning of synthesising and focusing.

Intention/aims

To focus the students' attention on the communication process. To produce clear instructions that stimulate confidence, empathy and a sense of belonging to the group. To promote reflection and constructive assessment. To calm the class down, implementing habits of hard work and critical expression. To practise a reflective and questioning attitude.

Resources used

Sheet of scenery paper (200×200 cm), sellotape, post-its, paper and writing material of various colours, drawing pins, scissors, gummed paper tape, dominoes, pegs, small objects, bag.

Sources/references used in the construction of the pedagogical proposal

Activities from the "Respira" Project. Inspired by the Modo Operativo AND, of João Fiadeiro.

Influences from the work of Philippe Perrenoud (1999). *"L'évaluation des élèves de la fabrication de l'excellence à la régulation des apprentissages. Entre deux logiques"* (Reviewing the regulation of excellence in learning – between two logics).

Syllabus contents worked upon

Acquisition of specific vocabulary from the curricular areas. Philosophical attitude of questioning and critical spirit. Capacity for synthesis. Applicable to all contents.

General description of the activities

Because of the importance of creating habits that can enhance a purposeful and critical attitude, one that is aware of the self and the world, the following activities seek to bridge that gap through the introduction of rituals. Occurring in every lesson, these rituals must be set up as moments of openness that allow for the questioning and autonomy of the students, seeking to effect a constant interconnection between thought and action.

1.1. Security rituals

Clearly establishing guidelines, highlighting aims and explaining precisely what is intended are some of the strategies that can be used by the teacher in every lesson and which, besides allowing for a transparency about its meaning, contribute to strengthening the idea of the group and the joint path that is followed throughout the school year. This is the underlying basis of the proposal to create two moments of dialogue that are repeated in every lesson. The first

takes place at the beginning of each lesson and is given over to the explanation of the day's agenda and the planned objectives. The second occurs at the end and involves the free summing up by one or two volunteers of the work that has been done during the lesson.

Examples

- Indicate the activity to be developed.
- Perform the tasks and prepare the materials to be used.
- Explain the aims of the activity.
- Point out the knowledge that is expected to be acquired.
- At the end of the lesson, ask the volunteers to freely sum up what has taken place.

Note

The explanation of the aims is particularly important to generate empathy and security about the performance of exercises that may create discomfort and tension.

1.2. Pieces of paper

The teacher creates two sets of small pieces of paper, recording on each of them one of the words related with the contents that are being taught (e.g. "rhapsodes" and "troubadours"). The number of these pieces of paper corresponds, in equal parts, to the number of students in the class:

- the pieces of paper are folded and placed inside a bag or an envelope;
- at the beginning of each lesson, the students, on entering the room, are invited to take one of these pieces of paper;
- in accordance with the name recorded on the piece of paper, each student moves over to one of the sides of the classroom, previously defined by the teacher (e.g. "rhapsodes", left side; "troubadours", right side), and sits down.

Examples of word pairs

- poesia/prosa (poetry/prose);
- feudo/burgo (fiefdom/borough);
- clero/nobreza (clergy/nobility).

After the new rearrangement of the classroom space and the expectation created by the word received, a more collaborative atmosphere is created, with it being possible to detect greater attention and willingness on the part of the students to participate in the activities that are about to be developed.

A variant for Physics and Chemistry could include the word pairs: electrons/protons, infrared/ultraviolet, Celsius/Kelvin, polar/apolar.

A variant for the formation of groups: instead of two words, four or five can be written, depending on the number of groups to be formed. The students with the same word belong to the same group.

Example for the subject of History

Market, Fair, Town square, Borough, Trade route.

Note

This micropedagogy can be applied to any subject area with suitably adapted vocabulary.

1.3. Choreography for a U-shaped room

Often the classroom's expository cartography limits the dynamics that are possible throughout the lesson. Arranging the tables in a U-format or horseshoe shape, however, makes it possible to alternate in the same room between a spacious central area, where group exercises and "corporisations" can take place, and micro areas where privilege is given to activities in small work groups. In view of the rapid and systematic nature of the transformation, the following choreography was constructed quite easily, which, after repetition, proved to be possible to implement in 33 seconds!

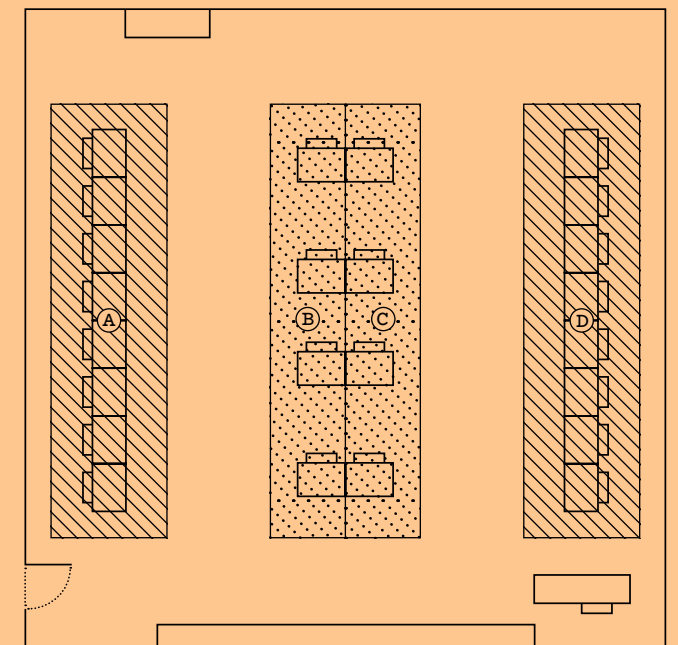
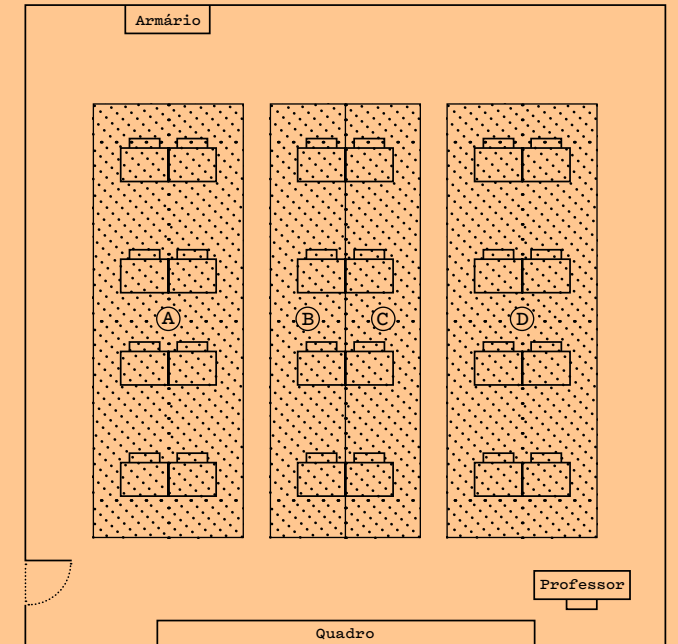
Premises

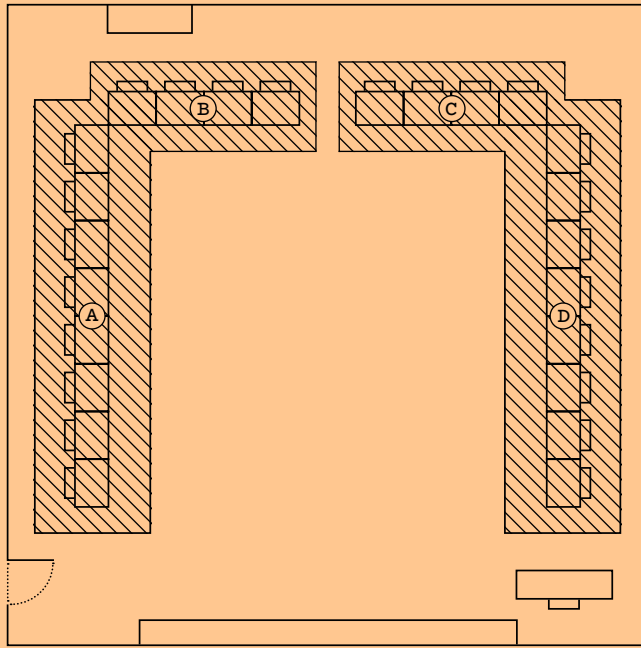
- There are four groups: A, B, C, D.
- The choreography is divided into two phases of four steps each, with the aim of rearranging the tables and chairs.
- Group A mirrors the actions of Group D in Phase I.
- Group B mirrors the actions of Group C in Phase II.
- As objects, the chairs and tables, are transported through the air, and not along the floor, drawing ellipses and arches. It is important to synchronise the taking hold, picking up and putting down of objects and their transport through the air.
- Ideal time for the performance of this choreography: 33 seconds!

Choreography

Phase I

- Groups A and D move simultaneously and mirror each other's actions!
1. Place chairs in the aisle.
 2. Place tables side by side. [Inside row shifts to the right]
 3. Place the chair between the table and the wall.
 4. Students position themselves behind the chair. [Groups B and C observe]





Phase II

Groups B and C move simultaneously and mirror each other's actions, as soon as Groups A and D complete Step 4 of Phase I.

1. Place chairs in the aisle.
2. Row 4 place their tables at the side ends. As soon as they have positioned their tables, Row 3 repeat the gesture, then Row 2, and finally Row 1.

[Gap in the middle between the row of tables]

3. Groups B and C place their chairs behind the table.
4. They position themselves behind the chair.

Notes

- Given the speed and agility of the choreography, this can also fulfil the functions of the ritual at the beginning and end of the lesson, physical activity, concentration and active listening.
- To return to the original format, 33 seconds will be needed for the (dis)choreography, which follows all the steps of the choreography in reverse (from the end to the beginning)!

1.4. Ritual for beginning and ending a session

While maintaining as the ritual for the beginning of the lesson the one that is described in the previous micropedagogy, or, in other words, the clear explanation of the activity, aims and lines of action, it is, however, suggested that a different habit is adopted for the closing ritual. This involves sticking a large sheet of scenery paper on



Ritual for ending a session

the wall (which is invariably the same one), on which the students write freely – in silence and simultaneously – noting down one single word relating to the lesson that has just taken place.

Note

In silence, and before they write their word, it is important that the students should first look at the scenery paper for roughly thirty seconds. This pause is due to the need for reflecting upon and re-reading the words already written (insofar as the sheet always comes from the previous lesson), as they are not allowed to repeat words. The students only move forward to write on the sheet when they receive the signal from the teacher.

1.5. Questions give birth to questions

As a closing ritual, it is suggested that, together, the group reflects about and formulates a question that reflects the class's experience for that day. The same question is then transposed to the opening ritual for the beginning of the next class, during which possible answers will be sought.

1.6. Imagining to question

Based on philosophical problems and the inherent search for the definition of oneself and one's relation to the other, this activity is geared towards reflection and non-verbal communication. The group begins by sitting in a circle and various materials are laid out on the floor in the centre (post-its, pens and different-coloured paper, scissors, pegs...). The students are invited to answer the question "Who are we?" and, without any pre-established order and without resorting to any verbal expression, they must freely use their bodies and the materials made available to present their answers. These answers can be a completion of, complement, or make a complete break with the previous ones. At the end of the exercise, the group are invited to describe their experience through a reflective verbal discourse.

1.7. Today I learned that...

As a ritual that insists on the constant use of reflection, this activity is characterised by the circumstance of the students being asked, at the end of each lesson, to write a single sentence that can summarise the most important things that they have learned and will remember from that day. The teacher should then keep these summaries (including their own) in a dated envelope.

Note

Identifying the author's name on these summaries is optional, as the emphasis is placed on the practice of reflection and synthesis. Nonetheless, this ritual also serves as a mechanism for self-regulation on the part of the teachers, since it allows them to form a perception of the students' apprehension of the contents presented on each occasion.

Awakenings

Characteristics of the situation/ problem for which the strategy was conceived

Gradual decrease in the students' capacity for concentration and active listening throughout the lesson. Excessive noise outside and inside the classroom.

Intention/aims

To recover the levels of concentration and active listening, introducing moments for pausing and relaxing the body (which will also help to improve the physical posture) and/or to listen to the silence/noise, in this way awakening the student's readiness to assimilate the intended contents.

Resources used

Tuning fork or a small bell.

Sources/references used in the construction of the pedagogical proposal

Classical tradition of the correlation between mind and body. Auditory learning exercises.

Syllabus contents worked upon
(not applicable)

General description of the activities

Taking into account the natural decrease in focus during the lesson, strategies are presented that seek to recover the students' attention and subsequently bring silence to the classroom. They function by awakening the students' senses and their awareness of their body and its rhythms.

2.1. Stretching

In each lesson, a moment may be created for the class and teacher to stretch, seeking in this way to recover concentration and reduce their corporal inactivity. This moment is decided upon by the teacher, but it should arise from the suggestion and/or the signs being shown by the students that they are in need of this activity.

Suggestion

The first act of stretching can be proposed unexpectedly and only explained afterwards, in order to cause greater surprise and impact for the students.

2.2. Silence

Sitting in a circle, or in the normal classroom layout, the students are asked to raise their arms when they stop hearing a certain sound, which can be produced, for example, by a tuning fork or a small bell. This sound should be a protracted one that ends slowly, with the aim of increasing the students' active listening and creating silence among the members of the class.

2.3. Ball game

Arranged in a circle, students and teacher share a ball. The one who has the ball is the sender; and the one who receives it is the receiver. The sender/receiver relationship is considered to have been formed when eye contact is established between the two of them. Once this eye contact has been made, and the ball has been sent and received, Sender 1 moves forward to occupy the place of Receiver 1. On receiving the ball, Receiver 1 is transformed into Sender 2, so that he must now try to establish eye contact as quickly as possible with Receiver 2, in order to send them the ball and move forward to occupy the place of Receiver 2 and leave their own place vacant, which will be almost immediately occupied by Sender 1

Example

Group in a circle

1. The group activity begins. Ana has the ball.
2. Ana looks at Bruno from the other side of the circle. Bruno looks at Ana: eye contact is clearly established.
3. Ana sends the ball to Bruno. Bruno receives it.
4. Ana moves forward to occupy Bruno's place, walking across the circle.
5. As soon as he receives the ball, Bruno looks at Cátia. Cátia looks at Bruno: eye contact is clear.
6. Bruno sends the ball to Cátia. Cátia receives it.
7. Bruno moves forward to occupy Cátia's place, walking across the circle.
8. As soon as she receives the ball, Cátia looks at Daniel. Daniel looks at Cátia: eye contact is clear.
9. ...

Premises

- Eye contact must always be established between sender and receiver.
- The movement forward to occupy the place of the receiver is always direct (in a straight line and without any hesitation).
- The ball cannot fall onto the floor.
- The responsibility for the quality of the sending and receiving of the ball belongs to both parties, sender and receiver, and to the group, which promotes the focus and attention.
- If the ball falls to the floor, it is returned to the sender.
- There is just one ball. All the rest (commentaries, extra gestures) is considered to be "noise".

Variations

- a) With music, increasing the speed and the number of focal points
- Take away the ball and perform the exercise just with the eyes, maintaining the precision of the eye contact.
 - Increase the speed, without losing any precision, making everything more efficient and more risky.
 - Increase the number of balls (up to 5!), without losing any precision, making everything more efficient and more risky.
- b) Without the ball, with themes and associated vocabulary
- Take away the ball and perform the exercise just with the eyes and without changing places.
 - The ball becomes the voice, or, better, it is delivered vocally: with precision and energy.
 - You can begin by saying: 1) the name of the person I am “sending” the ball to; 2) the vocabulary associated with other themes, such as “I like...”, “yesterday, I remembered...”, “father”, which reveal the world of the participants; 3) vocabulary related with the curricular contents such as “troubadour poetry” or “molar mass”.
- c) In two parallel lines, face to face, taking advantage of the aisles between the tables and without altering the layout of the classroom. In this case, it is recommended that the exercise is performed in a circle at least once.

2.4. Copacabana!

Everyone changes places singing whatever they feel like. A joyous cacophony that ends in silence, with everyone sitting in different positions. The only rule is that they can't remain seated next to the same classmate..

II 3

Making the invisible visible

Characteristics of the situation/ problem for which the strategy was conceived

Overcoming learning difficulties and problems of communication in general, and, particularly, in a foreign language. Encouraging the students to intervene instead of remaining inactive during theoretical lessons.

Intention/aims

To foster confidence, autonomy and trust among the students, giving them the freedom to actively intervene inside the classroom and the school space.

Resources used

Cardboard sheets, post-its, marker pens, sellotape. A racket or baton. Something that emits a sound: tuning fork or small bell.

Sources/references used in the construction of the pedagogical proposal

Influences of advertising strategies, making use of slogans.

Syllabus contents worked upon

Written communication in Portuguese and a Foreign Language. Distinguishing between what is accessory and what is essential. The power of the word.

General description of the activities

Exercises that are materialised through written work, geared towards developing the capacity for synthesis, organising information according to the analysis of the contents that are considered fundamental.

3.1. Manifestos

With the aim of working on and internalising certain terms in a foreign language, the students are asked to use these expressions in creating their own slogans, which will enable them to practise the grammatical and semantic structure of the language that they are learning. After they have shared their slogans with the class, it is important to analyse whether they have created new slogans originating from the previous ones and then to place them in strategic and highly visible places around the school. It is also important that they should later reflect on the impressions that are produced by the posting of these slogans.

Examples

- *Students must respect each other.*
- *Students give the best of themselves.*

Suggestion

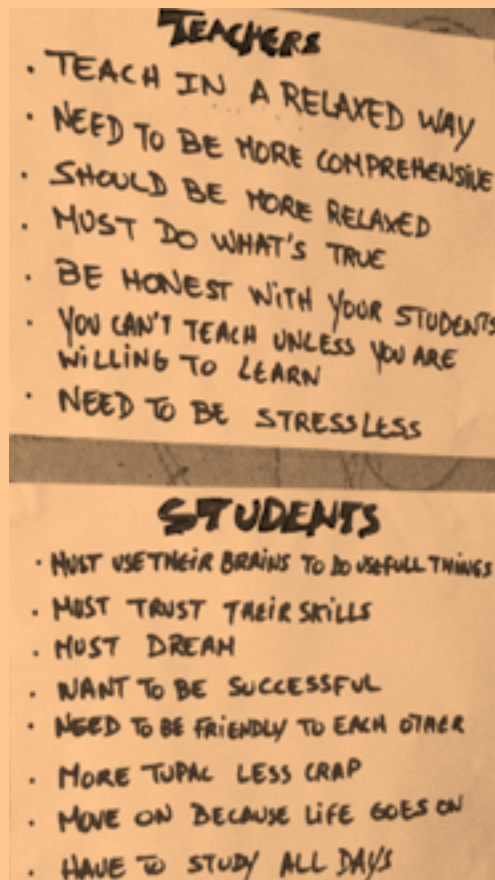
The correct use of modal verbs can be practised: *could/should* and *must/may*.

3.2. The signaller of knowledge

Choose a pair of students and give them the roles of signaller and counter-signaller. In order to perform their functions, they must both have some sort of racket or baton and be sitting in the front row (and therefore within the visual range of the whole class. During a theoretical lesson, it is the signaller's job to raise his or her "flag" (represented by a racket or baton) when they consider it to be important that the class should transcribe the contents that are being mentioned into their notebooks. In turn, the counter-signaller has, as his or her "flag" an object that emits a sound (a tuning fork, a small bell), which they must use to make a sound as a complement to the signaller's decisions. However, should either of them disagree with the signalling that has been suggested by their partner, they can signal this disagreement.

Suggestion

At the end of the lesson, the signallers can be thanked for their commitment to their work, in chorus and/or in the form of a role play. It is also important to create a strategy that validates the signallers and which, at the same time, indicates the contents that should have been signalled.



Manifestos



The signaller of knowledge

II 4

Group evocations

Characteristics of the situation/ problem for which the strategy was conceived

Difficulty in concentrating and dispersed attention, particularly with regard to mathematical formulations. Simultaneous resistance to the spirit of group unity and individual exposure.

Intention/aims

To stimulate the capacity for concentration and active listening as a group through mathematical calculus, as well as through the precise memorising of formulae and equations. To develop mnemonic strategies that facilitate learning.

Resources used (not applicable)

Sources/references used in the construction of the pedagogical proposal

References to the world of theatre and music. References to Hindu and Buddhist practices.

Syllabus contents worked upon

Calculus, equations and mathematical formulae.

General description of the activities

Through mental calculations and rhythmic dynamics, the students learn about and practise certain formulations and concepts.

4.1. Counting and enunciating as a group

The primary aim of the group is to succeed in counting to ten, but verbalised by only 10 of its members. For this purpose, a student begins by saying the number 1, and other members of the group should say the numbers successively, but without any overlapping of their voices. Should two or more students say a number simultaneously, the game must start all over again. Once the number 10 has been reached, the limit of the counting can be increased.

Suggestion

Besides the customary arrangement of the class in a circle, there are other strategies that can be applied in the process of counting numbers, such as using a blindfold, playing with the eyes closed or counting while walking around the space. An extra level of complexity can also be introduced by replacing the counting of the numbers with the joint enunciation of a formula, concept or definition.

Example

The general equation of photosynthesis can be expressed as follows:
 $6\text{CO}_2 + 12\text{H}_2\text{O} + \text{chlorophylls} + \text{sunlight} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$

4.2. Game of mathematical operations

Using positive whole numbers up to 5, and the operations of addition, subtraction, multiplication, division and result, each member of the group should think about and verbalise an operation that results in a certain proposed number. The first number may be suggested by the teacher, and it is the job of the student beginning the exercise to make a calculation that presents this as a result. However, when the solution is found, the student must use it, in a second phase, to develop another calculation that results in a new number of his or her own choice. In turn, this new result that is found must be taken up by the next student, who will also use it for a new mathematical operation. The game then proceeds successively, and in order, ensuring that all the students are paying attention to the number that is being transposed.

Examples

$$2 + 3 = 5 - 3 = 2$$
$$2 + 3 + 2 = 7 - 3 + 2 : 3 = 2$$

Suggestion

This exercise can generate different degrees of difficulty through the use of ever more complex numbers and operations.

4.3. Mantra

This activity consists of successive and rhythmic repetition, which, precisely because of its repeatability and cadence, makes it possible to learn a certain mathematical formula or equation by heart.

Example

Equation of the circumference: X minus a squared plus Y minus b squared equals the radius squared, with a and b being the coordinates of the centre of the circumference.

Suggestion

The use of simple and melodious forms that are only intoned makes the formula easier to memorise. Nonetheless, the appealing nature of the mantra also makes it easier for the students to memorise.

4.4. Game of the sound conductor

The class begins by being divided into small groups (between 5 and 7 members each) and a student is chosen to play the role of the conductor. Each group is given a certain sound, which should be produced when the conductor gives the signal. The conductor is responsible for directing a musical composition, and should insist particularly on the repetition of patterns, as well as calling for various sounds to be made simultaneously.

Examples

Some of the sounds to be used could be: *ahhh; ehhhh; tsssss; chhhhh, tum...*

4.5. Word volcano

Standing in a circle, the group functions as one single organism, with a common pulse. The rhythm of this pulse is defined through the joint movement of raising one arm towards the ceiling and then lowering it. Proceeding from right to left, each time the movement of raising arms takes place, a student says a word related to the proposed theme. The intention is that the pulse should remain constant and that the words should come up, as if they were in the process of erupting.

Suggestion

A theme may be suggested that serves to guide the eruptive action, but this doesn't prevent the themes from being altered by the free associations that are being made.

Game of sequences

Characteristics of the situation/ problem for which the strategy was conceived

Difficulty in memorising and focusing, particularly in the case of textual contents and sequences of movements.

Intention/aims

To develop the capacity of verbal and physical expression, reducing the barriers inherent in the students' expository activities and improving their initiative and commitment. To work on their capacities for memorising and concentrating through the semantics of the gesture and the Portuguese language. To improve vocal and motor coordination.

Resources used

Music (optional).

Sources/references used in the construction of the pedagogical proposal

The artistic practice of dance and its relationship with poetry.

Syllabus contents worked upon

Narrative text, poetic text and semantic structure. The structure of verbal and non-verbal communication.

General description of the activities

The proposed exercises are designed to unblock the students in terms of their verbal and physical expression, calling for a relationship of dependence between the word and the gesture.

5.1. The addition game

Arranged in a circle, the students are asked, in turn, to spell their name. Each syllable that is pronounced should correspond to a gesture of their choice. This results in a sequence of movements that expresses each of the names spelt out in this way.

Suggestion

This activity can be applied to texts, especially poetic ones. For example, by attributing a word from a poem to each student, the recital of the poem can be complemented with a choreography.

5.2. The memory game

The aim of the exercise is to create a choreographic sequence based on the conjugation of individual movements. According to this logic, each student begins by choosing a gesture/movement with which they feel comfortable. Following an order of presentation, each member of the group expresses their choice, thus resulting in a series of gestures whose sequence reveals a choreographic design composed by everyone involved.

Suggestion

With each gesture that they make, the students can attribute one or more words, making it possible to join together words and/or phrases that, little by little, lead to the construction of a text.

Perspectives

Characteristics of the situation/ problem for which the strategy was conceived

A weak attitude in terms of questioning and critical thought; alienation from the surrounding reality and a reduced observation of the world. Feeling blocked when beginning a task.

Intention/aims

To encourage problematisation and a critical mind, deconstructing prejudices, developing an active search for answers, sharing doubts and debating them as a group. To attribute students with an interventive role, giving greater value to themselves as people and their participation in the search for knowledge. To establish links between the curricular contents and reality. To foster creative thinking and the capacity for interpretation. To work on free register through drawing and to explore visual and written expression.

Resources used

"Field notebook", blank paper, soft pencil and writing material.

Sources/references used in the construction of the pedagogical proposal

Practical exercises in drawing and constructing narratives.

Syllabus contents worked upon

Philosophical attitude of questioning. Interpretation, expression and communication. Different types of texts.

General description of the activities

Activities are suggested that awaken the group to everyday reality through a heightened sensory awareness and a critical spirit. These proposals associate the capacities for reasoning and formulating questions with the practice of register, positioning the student in an active, dynamic attitude of understanding themselves and the world around them. They are encouraged to develop their own language and expression, especially through drawing.

6.1. In what way does this contribute to my happiness?

Reversing the traditional logic of meaning, according to which the teacher presents and explains contents, this micropedagogy returns to the students their own attentive way of seeing things and the search for their own questions and answers. By following such a procedure, teachers can begin by asking their own questions about the contents that they wish to analyse, while encouraging students to engage in the same practice. Asking open-ended questions; respecting the answers

and questions of all concerned; not pressing for the right answers or correcting those that are given; not adopting an attitude of assessment, but instead one of genuine interest in the questions and answers of the students are just some of the lines of action that should mark the teacher's involvement.

Example

Before looking at a leaf under the microscope, students can be challenged to record their own questions and look for answers through observation, or from other sources: "Why is this leaf green? What is its scientific name? What environment does it live in? Being an aquatic plant, does it photosynthesise?..."

6.2. The life of a line

This pedagogical strategy is developed under the scope of Drawing and is composed of two complementary moments that seek to unblock the potential fear of a blank sheet, and the subsequent difficulty in beginning a task.

6.2.1.

The first moment consists of an exercise that is dedicated to "Mirror drawing/symmetry" and involves vertically dividing a blank sheet of A4 paper. As this is an exercise that is done in pairs, one of the members begins a free drawing in one of the halves, while their partner tries to reproduce it – in mirror form – on their side of the sheet. After three minutes, the tasks are reversed.

6.2.2.

The second exercise is called "The life of a line" and its aim is that each student individually imagines that a blank sheet is marked with at least seven lines. Each of these imaginary lines must represent and express a different life, so that it must be drawn accordingly. It is by using this guiding thread that the teacher proposes "specific lives" for each line, which must be drawn from left to right and without taking the pencil from the paper. At the end of this activity, the results may be shared, so that students can reflect about the plurality of expressions that the drawing can transmit.



The life of a line

Examples

As far as the imaginary lines are concerned, it may be suggested that the students draw:

- a line that is as heavy as possible;
- a line that is almost invisible;
- a line that always says something;
- a line that symbolises something;
- a line that copies something from our field of vision;
- a line that hides something;
- a line that disappears on the sheet.

6.3. Drawing with eyes that see

Pairs are formed and asked to circulate in the precinct of the school outside the classroom. In keeping with the instructions given by the teacher, the pairs must choose the different points of view that enable them to draw what is asked for. For this activity of keen observation and expressive drawing, the following exercises are suggested:

6.3.1. Visual memory and residual images

For five carefully timed minutes, the pairs must observe a detail (of the garden, or architecture...), with the following five minutes being devoted to its description, mentioning all the senses used.

6.3.2. Drawing by sight

Having been invited to choose a point of view or an object that they find in their immediate surroundings, the pairs must draw that element in various ways, namely through blind drawing, drawing with the hand not normally used, rapid drawing, slow drawing...

6.3.3. Frottage (transfer of materials)

After choosing three different surfaces (preferably a stone with a textured surface), it is suggested that the pairs should undertake a *frottage*, i.e. that they should place a sheet of paper on each chosen surface and rub over it with the pencil until the transfer image appears. In each *frottage*, a legend should be included.

6.4. The conversation of others

As a work to be developed outside the classroom, the teacher asks the students to listen to and register phrases and/or a conversation that they hear between other people. This record must be used as the theme for the composition of a small imaginary narrative that contains some of the phrases that they initially transcribed. The students can then share this narrative, by retelling it aloud to the class.

**Characteristics of the situation/
problem for which the strategy
was conceived**

Difficulty in establishing a link between thematic areas and everyday reality. Disruptive behaviour, expressed by general distraction and parallel conversations.

Intention/aims

To counter the compartmentalisation of themes and the crystallisation of concepts, interweaving the syllabus contents with the students' life experience. To centralise attention, quickly and in a structured fashion, by resorting to the ridiculous side of things and instruments of communication.

Resources used

Computer, projector. Mobile phone or photographic camera. Cardboard tubes (used for rolls of cloth or paper), marker pens, paints, glues, stickers, texts and images.

**Sources/references used in the
construction of the pedagogical
proposal**

Recognition of the power of the image and the power of the word. The importance of humour and strategies based on carefully chosen and premeditated nonsense.

Syllabus contents worked upon

Applicable to all contents, particularly in the context of science and technology. The structure of communication and the poetic text.

**General description of the
activities**

The proposed activities are based, above all, on the application of different communicative structures designed to tackle – and overcome – the tendency for the attention of students to become dispersed in the course of the lesson.

7.1. Divisive images/binding images

By preparing a traditional presentation to project in the classroom, the teacher can introduce some surprising and unexpected images that do or do not refer to the contents under analysis. These images can be chosen according to their aesthetic principles and should provoke a strong visual impact, insofar as they are designed to capture the students' gaze and focus their attention.

Suggestion

During the projection, the teacher can choose to remain silent, making a brief pause that gives the students an opportunity for reflection, or can ask them to attribute a meaning to the images, thus opening up the possibility of ideas being shared and different points of view being discussed.



7.2. Gallery of scientific images

Using the mobile phone or photographic camera, it is suggested to each student that they should collect images of everyday life that refer to the horizon of science. Before being transferred to a device or platform where they can be collectively accessed, all the photographs must be presented and commented on in class.

Suggestion

Later, the images can be sent to professionals from different areas (for example, a scientist or an artist), so that their comments can also be collected and a greater openness can be created to different views and interpretations about the same object.

7.3. *Ridikulus articulatis*

This pedagogical strategy consists in the teacher's deliberate exposure to a ridiculous situation, with the aim of regaining the group's attention. It was designed to be used in circumstances where students are behaving in a disruptive manner, and manifests itself precisely in a staged, unexpected and equally disruptive response on the part of the teacher. The decision to resort to the ridiculous depends on a variety of factors to be considered, including: the way in which the class functions, the rhythms of the lesson, the number of times that this strategy is intended to be used... Once the focus of the group's attention has been recovered, it is the teacher's task to find a natural and fluid exit from his or her state of apparent madness.

Examples of *ridikulus* behaviours

Asking the class to stand up and, once they are on their feet, to politely request them to sit down. Indicate to them that they should stand up again, and then ask them to sit down once more. Continue on with the lesson as if nothing unusual has occurred.

→ Alerting the students to the presence of something strange in the classroom, real or imaginary. Without changing his or her tone of voice, the teacher can add a story about this presence that becomes increasingly nonsensical.

- Adopting the previous strategy, but including a student as an integral part of the general madness.
- Using a different, foreign or invented language, while maintaining an attitude of perfect naturalness and normality.

Example of strategic exits for *ridikulus* behaviours

- Recommencing the class as if nothing absurd had taken place.
- Making a brief reference to the ridiculous moment and linking this apparent delirium to the syllabus being taught.

7.4. Whisperer

The whisperer is a cardboard tube, decorated and personalised by each of the students. It is defined as a sound tool that allows for the transmission of bilateral messages, in an atmosphere of intimacy. Ideal for the sender to convey a personal whispered message, a story or a poem, this device also allows the receiver of the message to answer. Because it operates even in noisy environments, it is an object that facilitates communication.

Suggestion

The size and diameter of the whisperer influence the sound that is produced, so that different cardboard tubes should be experimented with. This tool functions particularly well when used by large groups. It can be used in multiple contexts and activities, being particularly valuable for promoting a sense of calm and for working on poetic texts.



Whisperer





Facilitating the learning of subject/curricular contents

Glossary
Writing
The body and/with the space
Appropriation
Negotiation
Argumentation



Thought machine

Characteristics of the situation/ problem for which the strategy was conceived

Lack of reading habits and of interest in words. Fighting the lack of concentration through creativity, awakening reasoning and strengthening ties of cooperation.

Intention/aims

To work on poetic writing and to deepen the knowledge and potentialities of the Portuguese language and other areas from the different school subjects, strengthening creativity and the students' self-esteem. To reinforce team work, sharing and active listening. To give importance to the individual and collective imagination.

Resources used

Texts, writing material, sheet of scenery paper (150×200 cm), marker pens, gummed paper tape. Computer and video projector.

Mobile phone.

Sources/references used in the construction of the pedagogical proposal

Influences from the theatre of improvisation and the training of spoken narration. The surrealist method of the *cadavre exquis*. Maria Gil.

Syllabus contents worked upon

Narrative categories; textual cohesion; stylistic resources; connectors; grammatical structure; semantic field.

General description of the activities

These consist of pedagogical exercises that are dedicated to the use of words, to the exposition of their meanings, to creative writing and spoken narration.

1.1. Poetry machine

The poetry-producing machine begins by consisting of a sheet of scenery paper (150×200 cm) stuck to the wall, containing only vertical lines that divide it into five spaces of equal size. It is presented to the students as an instrument that will rapidly turn them into poets, but which needs words to make it work. In this way, five distinct categories of words are introduced into its five divisions:

1. Nouns (substantives);
2. Verbs;
3. Places (substantives);
4. States of being (abstract nouns);
5. Adjectives.

The students are then invited to fill in the five columns with appropriate words, encouraging one another through pair work. When the sheet of scenery paper is filled in, they are challenged to write poetry (five lines) resorting to a combination of the words that have been introduced into the columns. To this end, only some columns can be used and/or the order of reading can be reversed. The verses resulting from this should be read aloud to the class in an expressive way.

Examples

1. Nouns: *poet, sun, wave, idea...*
2. Verbs: *kiss, laugh, discover...*
3. Places: *desert, thought, universe, island...*
4. States of being: *health, hunger, courage, intelligence...*
5. Adjectives: *sensual, friendly, profound, strange...*

Possible combinations

- “The poet kisses the profound universe.”
- “The idea laughs at the thought with intelligence.”
- “The strange longing discovers the sun.”

Suggestion

The session can end with the reading of a *haiku* (a short poem of Japanese origin), which will be used to enhance the students’ creative performance. The poems written in class may also be complemented with a later proposal for an illustration of these same poems (real or imaginary).

1.2. Undying body

This exercise consists in telling just one single story. Its particularity lies in the fact that the narrators are chosen through a glance. In a group arranged in a circle, one of the participants begins an imagined story and, with their glance, they pass on the story to another member of the group, who must then pick up and continue the narration. In turn, this member of the group will also pass on the continuation of the story to another colleague, also through their glance, and so on. In order to construct a single and collective narrative, the following conditions also apply: the narrators cannot end the story before the teacher tells them to; they cannot negate or contradict the previous proposal; whenever possible, they recover the details that have been added, giving them greater power and meaning.

1.3. Undying body with connectors

The structure of this activity is similar to that of the “Undying body”, but introduces an extra level of complexity: the connectors. Following the same pattern as the previous game, in the sense that it maintains the transfer of the narration with a glance, this micropedagogy also requires that this moment of transition is accompanied by a connector to which the narrator must give continuity.

Examples

- “The man arrived in the garden and sat down. He was absent-mindedly feeding the ducks *when...*
- ... *when* a lady stumbled and fell, right in front of him. He immediately wanted to help, *but...*
- ... *but* he couldn’t stand up. *So...*”

Suggestion

In an initial phase, a list of connectors can be projected or written on the board, which will help to develop the activity. A greater level of difficulty can be introduced if the ideas that the connectors transmit are listed.

1.4. Text message tales

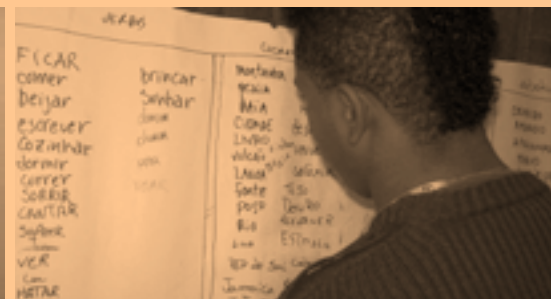
Making use of a fundamental object from the students’ everyday life, this proposal consists in writing a story through text messages on a mobile phone. For this purpose, each student must transcribe to a sheet of paper the first three text messages that were received from different senders. This same sheet is then handed to their classmate sitting next to them, who, based on the contents of the messages, constructs a narrative and presents it orally.

Suggestion

At a later moment, it may be proposed that the tale is shortened and that, based on this reduction, a new synthesis is asked for. Another synthesis is then made, and then another one, transforming the story into a micro-tale in the form of a text message.



Poetry Machine



Glossaries

Characteristics of the situation/ problem for which the strategy was conceived

Lack of vocabulary and difficulty in understanding concepts.

Intention/aims

To develop curiosity about the Portuguese language. To enrich the specific vocabulary of the different areas of study, expanding the field of signification of the words and understanding the multiple meanings that these may have. To suitably apply the items of vocabulary in their different contexts; to establish bridges between scientific concepts and everyday reality.

Resources used

Computer, dictionaries, spelling guide, school textbooks, paper and writing material.

Sources/references used in the construction of the pedagogical proposal

Writing exercises. Literary world of the writer Mia Couto.

Syllabus contents worked upon

Apprehension of specific terminology from curricular areas. Distinguishing between and understanding different types of texts (narrative, descriptive, discursive...).

General description of the activities

Creating a space to be filled with the recording of unknown words, concepts or expressions. Searching for and noting down their meanings, deepening the understanding of their characteristics and/or expanding them to make possible links with other themes.

2.1. Word glossary

Collection of words, research into and recording of their respective meanings. This may include the etymology of the word, its history and curious facts about it.

2.2. Invented words

Inventing words arising from a creative and imaginary plan. One student says a syllable and a classmate adds one or two syllables to it, thus inventing a word, for which they must then provide an explanation/definition using an instinctive etymology. Based on this dictionary of invented words that is gradually created throughout the year, it may be suggested to the students that they write a short story in which they introduce some of these new words.

Examples

→ “jonas” + “tal” = Pai Natal da Jamaica (Santa Claus from Jamaica)

→ “ante” + “ólogo” = Pessoa que estuda o “antes” (Person who studies what came before – “antes”)

Note

A knowledge of the origin of words and the explanation of their meaning through their different compositional elements make it easier to understand them.

2.3. Chemistry glossary

Collection of words and/or concepts from Physics and Chemistry, and a description of their respective meanings. The glossary can also include brief biographies of scientists and an explanation of scientific models.

Examples

→ Uranium: Uranium is an element from the Periodical Table that belongs to the group 6 elements of the actinide series. It is a radioactive element represented by the symbol U, with the atomic number 92, a relative atomic mass of 230.03 and a boiling point of approximately 4404 K. It is solid at room temperature and its electronic configuration is [Rn] 5f7 6d4. Its most significant use is in the production of energy through the controlled fission of its isotope uranium-235 (235U). Uranium is a word that was created in tribute to the planet Uranus.

→ Linus Pauling Diagram: This is a diagram that has taken the name of the American chemist Linus Pauling. It is designed to help understand the distribution of the electrons in the electron configuration of atomic orbitals. Their energy levels are symbolised by letters: s (*sharp*), p (*principal*), d (*diffuse*) and f (*fine*).

2.4. Biological and everyday glossary

Collection of scientific words and/or expressions that establish a relationship between concepts used both at the scientific level and in everyday language.

Examples

→ Cell – a structural and functional unit of all living beings.

→ Cell – a small room.

→ Tissue – a group of specialised cells that perform the same specific function.

→ Tissue – a paper handkerchief.

Note

Games and other playful activities can be performed that test the knowledge acquired by students, as well as gauging their capacities for memorising or understanding the words and concepts that they have recorded, as well as for establishing transversal relationships between concepts and areas.

2.4.1. Handkerchief game

The class is divided into two teams. Each member of the class has their glossary with them and each student is given a number (these numbers are the same for both teams). By saying a certain number, the teacher asks the two corresponding students to come to the centre of

the room (one from each team). They are presented with a word and, in thirty seconds, the two students must say two separate sentences in which they use the term correctly, both in its scientific and its everyday context. One point is awarded to the team that presents their words correctly, and so on, until the winning team is found.

2.4.2. Hangman

The teacher (or a student) draws on the board the spaces corresponding to the letters of a word that has been analysed in the subject being taught. A maximum number of guesses is established for each student, or the class as a whole, to try to find the right answer. Each guess corresponds to the choice of a letter, and the final aim is to form the word. If they guess the right letter, this is placed in the appropriate spaces on the board. If they get it wrong, part of a set of gallows is drawn. The game ends with the hanging of a figure or with the correct discovery of the word.

Suggestion

This activity can be performed in every lesson, as an opening or closing ritual.



Autobiographies

Characteristics of the situation/ problem for which the strategy was conceived

Lack of a self-critical spirit.
Difficulty in showing emotions.
Lack of interest in writing.

Intention/aims

To awaken the students' self-awareness, leading them to reflect about their own self. To foster an interest in writing and to understand the characteristics of different types of text. To create moments of intimacy through the production of autobiographical materials. Learning to listen and to critically analyse different written registers.

Resources used

Hand-written letters, envelopes, family stories, photographs, images, writing material, mirror, diversified smells, poems (as, for example: "Self-accusation", by Peter Handke).

Sources/references used in the construction of the pedagogical proposal

Autobiographical literature; short stories. Exercises in oral and theatrical improvisation.

Syllabus contents worked upon

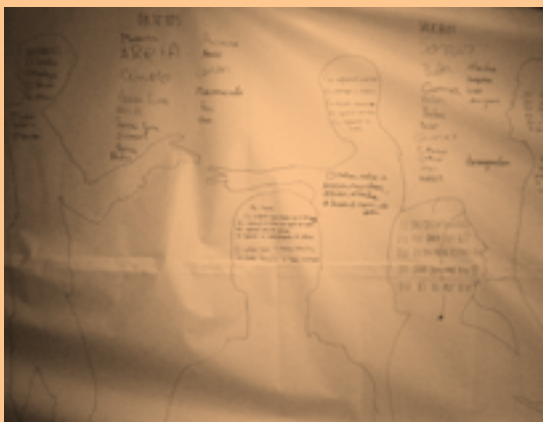
Recognition and production of autobiographical texts, distinguishing these from other types of text. Understanding the compositional structure of a letter. Introduction of questions of a philosophical nature, namely "Who am I?" Distinguishing between truth and verisimilitude.

General description of the activities

These correspond to exercises in the individual production of autobiographical materials that reflect the search for self-knowledge and, simultaneously, enhance one's life path. They are also intended to expose students to moments of sharing, helping to create greater proximity between them and strengthening interpersonal relationships.

3.1. Series of writing exercises

This involves the use of diversified resources to enhance the revelation of the self. For example, with the use of a mirror and through the conscious experience of self-observation, the teacher can propose that the students write about who they are. A blindfold can also be used and, by exposing the students to different smells, the teacher can see if these evoke memories in them. Writing about their favourite part of the body, an autobiographical event or photographs, sending a letter to someone that they haven't been in contact with for a long time and/ or writing about a desirable imaginary experience are other ways of promoting reflective, biographical writing, together with the students' journey of self-knowledge.



3.2. True or false

It is proposed that the students think about two stories from their lives, one true and one false, sharing them with the class in the order that they prefer. It is up to the rest of the group to discover which one is true, justifying their choice. It is important to later analyse the elements that pointed to the fact that one of the stories was false (hesitations, glancing away, emotions...).

3.3. Individual letter

The teacher writes some letters by hand and gives them individually to all the members of the class, possibly introducing references that are directed more towards the identity of each of the students, such as, for example: poems, images, song lyrics. The students are invited to reply in the same way.

3.4. Short autobiography

Each student reads and interprets the poem, "Self-accusation", by Peter Handke. Taking their inspiration from this, they must then write and present a short autobiographical poem (roughly five lines).

3.5. Autobiography

Based on a photograph/image and a piece of music that they have previously selected, the students begin by writing a text describing the photograph/image they have chosen. Next, they present the description, while also, if they wish, making use of a corporal expression that illustrates it, and discuss it with the class. The music is introduced as a bridge to the poem, through the deconstruction of its title and an analysis of its theme.

3.6. A letter to oneself

Each student writes a letter addressed to themselves, reflecting on what they want to say to themselves. The letters may be more in the nature of a reflection, or more similar to a confession, and each student is given the freedom to talk about themselves in whatever way they wish. The letters are then handed to the teacher, who replies individually to each one, as if the students were actually conducting an inner dialogue with themselves. As such, an attempt must be made to absorb the biographical aspects that were registered. The dynamic created by the exchange of letters makes it possible to engage in a dialogue about the differences between texts of a biographical and an autobiographical nature.

3.7. Family stories

In parallel to the above exercises, and in an attempt to bring the students closer to their own family sphere, they are asked to bring to mind a family story and describe it in the form of a short narrative. They can then present it to the class, orally, without resorting to reading.

Recitals

Characteristics of the situation/ problem for which the strategy was conceived

Absence of habits relating to the reading and interpretation of poetic texts; difficulty in memorising and deciphering.

Intention/aims

To promote interest and pleasure in the expressive reading of poetry. To raise awareness of the importance of active listening, diction, oral expression and rhythm. To improve the articulation between words, discovering the importance of their sound. To find the musicality in poetic texts.

Resources used

Poems, sound recorder.

Sources/references used in the construction of the pedagogical proposal

Poetic texts and lyric poetry by Camões.

Syllabus contents worked upon

The characteristics of the poetic text; the structure of poetry and lyric poetry. Denoting and connoting. Stylistic resources. Expressive reading. Rhythm, notions of versification and declamation.

General description of the activities

Developing practices for memorising and interpreting different poetic texts, through exercises for their declamation and expression.

4.1. Thematic recitals

Using books that are not included in the compulsory bibliography, the students must select a phrase that is related in some way with the contents of the syllabus being analysed in the classes. After sharing their selected phrases and justifying their choices, the students rehearse just once the way in which they want these phrases to be recorded. After recording, the phrases are listened to in the dark, discussing the difference in the impact between listening to the recordings and the live recital of the phrases.

4.2. Space and poetry

A poem is chosen and a line is attributed to each student, who must then memorise it. Working in an empty room, the students can move freely around the space while they recite their line aloud. They must experiment with saying the lines in different ways.

Suggestion

Recite the line in the precise time it takes to cross the room in a straight line; whispering it, shouting it, singing it...

4.3. Poem choirs

After listening to poems recited by some actors and poets, another poem is chosen that must be recited aloud and in unison. This task is guided



Poem choirs



Reciting poetry aloud

by a conductor (a role that may be performed by the teacher, or by one or more students), whose instructions must be followed by the class. It is also possible to create small groups who are given other tasks to perform during the recital of the poem.

Suggestion

Stress certain lines or omit them altogether; create rhythms; highlight metaphors, hyperboles, repetitions or other linguistic features analysed in the teaching of the subject. Another exploratory possibility may be to find a group member that can produce a rhythm box with their voice, in order to accompany a spoken chorus.

4.4. Reciting poetry aloud

Taking into consideration the identity of his or her students, the teacher groups them together in pairs and offers each pair a poem. All the poems must be previously personalised through the writing of a dedication. It is important that the pairs should identify with the poem and take ownership of it, trying out countless other ways of reciting it.

Suggestion

Recite the poem without punctuation; sing it; prolong the syllables; highlight words with the voice; introduce different accents and intonations; recite it by taking into account its expressiveness, musicality and movement; explain the meaning of the poem while another student is reciting it.

4.5. The power of poetry

The teacher previously chooses a poem and distributes a line to each student, asking them to memorise it. When their turn comes, and at a signal from the teacher, each student must stand up and say their line, but completing it freely with words of their own. This exercise can take on different degrees of complexity, should the continuation of the line be circumscribed to certain stylistic resources, or to other linguistic features that one wishes to work on.

4.6. Word fight

This activity promotes a dialogue between rival groups, but conducted only with the use of poetry. For this purpose, the class is divided into two groups, and their respective members are arranged in two parallel lines, face to face. A short poem is chosen and handed to each of the students so that they can study it. Using just the words and the lines contained in it, the students can provoke and respond to the opposing team, thus

constructing a fragmented conversation about the poem. It is important to stress certain factors – such as expressiveness, tone and physical posture – that are crucial for enriching this challenge.

4.7. Phonetic notation

“Anda, meu silva, estuda-m’aleção”

The following proposal for a micropedagogy is designed to raise awareness and actively reflect on the differences and characteristics of the “cantigas de escárnio e maldizer” (songs of mockery and vilification) and on the gaps in the students’ articulation of these; to relate writing and oral expression; to link together and explore the relationship between the contents “troubadour poetry/cantigas de escárnio e maldizer” and “phonological processes”; to enhance the students’ skills of “oral expression”, “argumentation” and “intertextuality”.

- a) The class is divided into groups of five students each, in which each student will be given a number between 1 and 5. Each student will have the task of transcribing to the paper phrases that are said by the teacher, corresponding to the number that they have been given.
- b) The teacher reads aloud the poem “Anda, meu silva, estuda-m’aleção”, by Alexandre O’Neill, line by line. Before each line is read, the number is said of the student who is responsible for its transcription. Each line is repeated only twice, with a very careful articulation.
- c) When the reading of the poem is completed, each group posts their joint record on the wall; intergroup observation of the differences between the records.
- d) In a circle, the following question is asked: is the text that was read medieval or contemporary? Each participant must then present arguments to support their point of view.
- e) A reflection is proposed about the relationship between “maldizer” and “dizer mal” because of the differences in their articulation; reading of texts aloud in different registers proposed by the teacher, experimenting with the following changes between letters: B in place of V; P and N in place of B; V in place of F; S in place of CH; R and L in place of G; ãO in place of ON; ÕE in place of IN; EM in place of EINHE; RR in place of R; R in place of RR. Each reader will have 24 listeners (or the number corresponding to the total class number, including the teacher).
- f) The concept of experimentation with phonological processes is introduced, as a continuation of the previous exercise.
- g) Making use of the manual for Portuguese, reading of a piece of troubadour poetry, observing phonological processes and practising reading aloud.

4.8. Medievalisations – twentieth and twenty-first-century poetry

With the aim of encouraging group work and the students’ autonomy, increasing their sensitivity to the listening exercise and the articulation of sounds and words through challenges and for their own pleasure, the following proposal was developed, which seeks, through the

exploration of sounds from twentieth and twenty-first-century texts, to develop an awareness of the sound and resonance of words, and challenges the students to create their own phonetic notation. This micropedagogy combines the contents of troubadour poetry and phonological processes, while, at the same time, making it possible to explore and study in greater depth oral expression, intertextuality and critical thought.

Premises

- a) Rearrangement of the room into a U-shape.
- b) Distribution around the class of six twentieth-century poems. Each poem will have four copies. The students with the same poem will be grouped together.
- c) Each group prepares a presentation of the poem, seeking to make it more “medieval” and respecting the following coordinates:

Moment I – Sound exploration of the “medieval universe”

Duration: 20 to 30 minutes

1. Division of the poem and distribution of lines to each member of the group. Everyone must have at least three lines.
2. Reading of the poem aloud in the presence of the group, respecting the previous distribution.
3. Exploration of the sounds of the poem using the:
 - addition and exchange of consonants and nasalisations [X, Z, ON...];
 - addition or exchange of expressions and words;
 - alliterations/families of words;
 - conscious use of two phonological processes.
4. maintenance of the metre of the poems.
5. Rehearsal of the presentation, bearing in mind the use of principles relating to oral expression:
 - choice of the places for the presentation [relationship between the actor and the audience];
 - direction of the gaze;
 - volume and speed;
 - clarity of articulation.

Each group performs the role of the actor in the presentation, and the audience in the listening exercise.

Moment II – Presentation

Maximum duration of each presentation: 2 minutes

Together, students engage in critical thought about the presentations, in accordance with the following parameters:

- Diversity, wealth and interest of the sound score/medievalisation of the poem.
 - Pleasure gained from listening to the medievalised text.
 - Compliance with the rules.
 - Quality of the oral presentation, bearing in mind the principles of oral expression.
 - Interest of the presentation: did the presentation significantly increase the interest in listening to the text?
- Rearrangement of the room in a format for expository activities, if required.

Forum

Characteristics of the situation/ problem for which the strategy was conceived

Need to transform a class into a work team, strengthening the feeling of belonging and cooperation. Difficulty experienced by the students in understanding that knowledge cannot be compartmentalised, but is instead part of a whole.

Intention/aims

To encourage communication and horizontal debate through greater cohesiveness and group spirit. To develop practices and increase the will to work together as a team. To relate the syllabus to the students’ everyday life; to contribute to its active deciphering and the production of syntheses, especially through the use of technologies. To develop the students’ capacities for argumentation, analysis, synthesis and creativity. To raise awareness of the need for ecological attitudes and behaviours.

Resources used

Computer, video and sound editing programmes, Internet, photographic and film cameras or mobile phones with photographic/video cameras. Sound recorder and sound system. Notebooks; ballpoint pens; school kitchen/canteen; food “gleaned” at the market; “dinner kit”: apron, flask, napkins...

Sources/references used in the construction of the pedagogical proposal

Influence of exercises in the world of cinema and photography. For the QR Code, the following hyperlinks: Generator: <http://br.qr-code-generator.com> Decodifier: <http://zxing.org> Legend of “Dido and Aeneas” and the love affair between “Dom Pedro and Dona Inês”. Chef Dinis; website of the Cor de Tangerina restaurant; documentary *The Gleaners and I*, by Agnès Varda.

Syllabus contents worked upon

Nebular theory of the formation of the solar system. Composition of the solar system and the different types of heavenly bodies. Cycle of rocks. Plate tectonics. Planetary science. Vulcanology. Love in Classical Antiquity, in Roman civilisation and the Middle Ages (troubadour poetry). Conceptual network of human action.

General description of the activities

Below are work proposals to be developed collectively and which are designed to encourage the sharing and discussion of ideas, and especially a complementarity between synthesis and argumentation, the creative universe of the students and their everyday reality. These proposals also involve a consolidation of knowledge, defining strategies for action, planning work, reflecting, discussing ideas and reaching conclusions.



Forum



QR Code (Quick Response Code)

5.1. QR Code (Quick Response Code)

Unexpectedly, the students were asked to open their textbook for the subject being studied and, on the specific pages indicated to them, to stick the QR codes that were distributed at that precise moment. These codes are correlated with the thematic contents of the pages on which they were stuck, with the students being responsible for their decodifying. They must also critically analyse their contents, the relationship that they establish with the syllabus for that subject, and end the exercise with a reflective synthesis about the information that they have gathered. This synthesis must be presented in the lesson in which these concepts are touched upon and must be accompanied by the webpage to which the code refers. The other members of the class must interact in this process and justify their views on the theme under analysis.

Suggestion

The hyperlinks may refer to unexpected contents, in order to increase possible crossovers and associations with the present-day world, such as music videos, sounds, images, architectural features, cartoons or landscapes.

5.2. Journey to my homeland

Each student is asked to choose a destination that they would like to travel to. Arranged in pairs, each member must make this journey through the applications Google Maps and/or Google Earth, explaining and justifying to their partner their reasons for choosing that place, the experiences that they would like to enjoy there, what they would like to get to know and/or share.

Suggestion

The destinations chosen can be used to form a theme for exploring the relevant contents for the subject being studied, seeking to ensure a constant link with the horizon that defines the reality of the students.

5.3. Our subject would make a good film

The video offers several possibilities for creating audiovisual objects that help to understand and assimilate the contents of the different subjects.

5.3.1. Our trailer

This activity consists in challenging the class to produce a trailer for a feature or medium-length film, which is capable of condensing the themes approached in a given subject and mentioning their most fundamental aspects.

Firstly, ask the students, as a homework task, to individually select the parts of the film that they consider it essential to include in the trailer. Afterwards, as a group, they will gather together all the selections that have been made and ascertain the affinities and the differences in the excerpts chosen by each member of the group. Next, discuss which excerpts are to be maintained and which can be left out, as well as the possibilities of ordering the passages to be included based on prior negotiation. At the end of the process of constructing the trailer, check with the class whether some fundamental aspect of the film has been left out, promoting a discussion that will establish criteria regarding what is essential and has to be shown in the trailer. This micropedagogy is all the more effective when it includes as many of the contents as possible about a certain matter contained in the original film.

5.3.2. Film with photographs

This collective activity begins by involving the writing of a plot that will clarify or explain a certain content from the syllabus. This narrative will be the guiding thread that will then accompany the production of a short film produced with the use of photographs. For this purpose, the moments of discussion among the class should demonstrate mastery of the contents of the subject being studied, as well as the students' capacity for argumentation. It is important to establish the stages of the work process: sharing ideas in the group; building the script; planning and directing the filming/photographs; editing and finishing work. The use of photography facilitates the shooting of the film, so that all that is needed is a photographic camera or a mobile phone. If necessary, the film will include a narration (given live or pre-recorded). Music may be used as a support and a means of establishing links between the images.

Suggestion

Several work groups can be formed, each performing the tasks for the different phases of the process: writing the script, planning, shooting and editing the film. The aim of the video resulting from this work may be to solve a problem related to the subjects chosen. The teacher may propose themes and present strategies for making the videos (for example, the "stop-motion" technique, the suspense film, etc.).

Examples

Made in

(can be seen here: <https://vimeo.com/oantoniopedro/made-in>)

The students choose something that they bring with them, with the aim of making a biography of this object that forms part of their own biographies. They photograph this object and research into the conditions of its production, from the moment when it was made until the moment that it first belonged to them. Each student narrates the result of their research, which

is recorded and joined with the photographs. Together this information provides a view of the capitalist mode of production.

O Código – The Code

(can be seen here: <https://vimeo.com/98018634>)

A suspense film that uses the theory of binary codes to construct a narrative that forces students to master this mathematical content. In this particular case, it was presented with a live narration, which was later recorded with mobile phones and was then joined together with the images in the editing programme.

5.3.3. Film with mobile phone

This activity involves using an object that is very much present in all of our lives to produce a short film-summary of a given subject. This challenge proves to be highly motivating and brings together a lot of skills, while being a different and effective way of producing the group project. The mobile phone can film and record the voice off separately, with surprising results at the level of the film's technical quality. The separation between image and sound makes it possible to divide the work up between the members of the group and means that the subject-matter has to be summarised in a democratic way and discussed among everybody concerned.

Suggestion/example

A Vingança de Fermat (Fermat's Revenge),
about Fermat's Last Theorem

(can be seen here: <https://vimeo.com/97939322>)

This is a highly fashionable trend on YouTube and is one that is well-known by most adolescents: simple drawings that illustrate the narration are made on the school's white board and then sped up in the video editing programme.

5.4. Talking stick

With the aim of encouraging moments of dialogue and argumentation about the syllabus that is being taught, the sound recorder (almost all mobile phones have an application that transforms them into sound recorders) can be used as an instrument that enhances active listening and communication. In a debate about a certain theme, all of the students are invited to share their opinion with the class, but they may only do so when they request the only sound recorder that is available and use it to record their speech. This activity requires silence for the recording process, and autonomy in the act of presenting the argument. In a subsequent phase, the recordings can be listened to with the aim of ascertaining the silence and the noise that are recorded on it.

5.5. Simplified retelling of classical stories

→ Two love stories from different periods are narrated to the class. For example, Dido and Aeneas (from Classical Antiquity) and Pedro and

Inês (from the Middle Ages).

- In small groups, formed at random, the students are asked to retell one of the stories to someone who knows nothing about them.
- Before beginning the group work, the whole class watches excerpts from performances inspired by the above-mentioned stories (choreographies, operas).
- The students are challenged to create an artistic product/object that reproduces the narrative in an original way.
- Each group plans the respective project: stages, materials and finished product.
- The groups work in class under the supervision of the teacher, but they complete their works outside the classroom, in an autonomous fashion.

Note

The students revealed creativity and used diversified resources: puppets, paper theatre, video.

5.6. Dinner... after gleaning at the Taipas Market

“Once upon a time... a class from the tenth year of the Escola Secundária das Taipas went to the local market to engage in the activity of gleaning. When they got there, they met the chef Dinis and his assistant Liliana, who explained to them the aims of the activity. They understood that this activity had to do with contents from the subject of Philosophy, namely with questions relating to the theme of human action.

The class was divided into groups. Our group set off in search of the leftover products that might be given to them by the stall holders. We approached one of the stall holders, who, after we had explained the activity to him, gave us some fruit and vegetables that it would no longer be possible for him to sell. We continued to engage in our gleaning process, but now with people better understanding the interest of the activity and the lessons that we might derive from this. Finally, we all met up at the agreed place, already with bags full of food, to present a small spoken report, in which each group recounted their experience and took note of the products that they had collected. The photographs of this event will be presented in the lesson. The following day, the groups were summoned to perform certain tasks necessary for the preparation of a dinner and to organise the table and the event, where we would use all the food that we had gleaned.”
(Descriptive synthesis made by one of the groups)

This activity was completed with a lecture, given by the chef Dinis and his assistant Liliana, about the theme of gleaning, the properties of the different foodstuffs and sustainable development, and with a dinner party to which the parents and guardians were invited, together with some teachers and the students from the class. The activity was concluded with the cleaning and tidying up of the spaces used.

Corporisations

Characteristics of the situation/ problem for which the strategy was conceived

Difficulties in solving mathematical and geometrical problems, as well as in apprehending scientific concepts and contents from various subjects.

Intention/aims

To approach scientific problems and concepts from the different school subjects in a rigorous manner, based on concrete experience. To use mathematics as an instrument of interpretation and intervention in real life. To use corporal expression as a complement for apprehending and memorising conceptual contents, reinforcing collaborative work. To simplify complex scenarios.

Resources used

Film camera and video projector. Computer and Internet. Four elastic bands, gummed paper tape, small objects and plastic materials. Three different-coloured strings, pegs and post-its. Tables, pens, pencils, rubbers, scissors, books and notebooks. Ladders and papers.

Sources/references used in the construction of the pedagogical proposal

→ http://improvincyclopedia.org/games//Cross_Circle.html
→ <http://notasdator.blogspot.pt/2009/10/games-dram%C3%A1ticos-e-teatrais-concept.html>
→ <http://www.ufoc.org/images/stories/OBC/Handbook/H.%20THEATRE%20GAMES.pdf>

The Iliad, by Homer. → The play *Hamlet Sou Eu*, performed by the Teatro Praga.

Bibliographical references

→ Spolin, Viola (1999). *Improvisation for the theater: A handbook of teaching and directing techniques*. Evanston: Northwestern University Press.
→ Boal, Augusto (1998). *Jogos para atores e não-atores*. S/l: Civilização Brasileira.
School textbooks from different subjects.

Syllabus contents worked upon

Plane and space geometry: intersection of a solid by a plane; vectors and operations with vectors; symmetries in relation to an axis and the Cartesian reference frame. Contents of Physics and Chemistry: emission and absorption of energy from an electron. Biology–Geology: the formation and composition of the solar system; equation of photosynthesis and sexual reproduction and genetic variability. Portuguese: troubadour poetry – *cantigas de amigo*, *cantigas de amor* and *cantigas de maldizer*. History: the art and culture of Greece – Athenian democracy; evolution of the political regimes in Athens.

General description of the activities

Strategy for the spatialisation and corporisation of concepts that, working on notions of a more abstract nature, seek to make them concrete and to establish links with reality.



Paramecia

6.1. Paramecia

This activity is designed to help students memorise and understand specific concepts approached in the classroom context and to express them through different body movements and vocal interpretations. By dividing the class into as many groups as there are concepts chosen, one can choose to work on several concepts, with each group being made responsible for the translation of their concept into appropriate gestures, sounds and rhythms, according to a logical sequence and by coordinating voice and movement. All of the concepts may also be “corporised” simultaneously in a chorus of several bodies and voices, creating a kind of orchestration. The gestures should be closely related to the concepts, in order to strengthen their understanding and memorising.

Examples of concepts (generally “difficult” words)

Paramecia, flagellate, rhizopod, sporozoa, bipartition, fragmentation, multiplication, haplont, diplont, haplodiplont.

6.2. Meteoric dynamic

The students circulate freely around the room. Without revealing their choice, they are asked to think of a member of the class and to keep as far away from this person as possible. Next, the reverse movement is proposed, or, in other words, that they move as close to the other person as possible. From this pattern of movements, nuclei of students are formed that relate to the notion of planets formed from cosmic matter. In a third phase, the students are grouped together in pairs, symbolising the planets and their respective satellites. By attributing a central position, representing the Sun, to one of the group members, the possibility is added of simulating the movements of the revolution and rotation of the Earth.

6.3. Making the invisible visible

Taking as the starting point and the object of analysis a range of different elements that are not visible to the naked eye, this pedagogical strategy proposes that, through the use of the body and

corporal expression, the students can represent these same elements physically and in three dimensions. It is in such a context that aspects such as horizontality, verticality, space and the relationship with the other become decisive for the conception of the representations.

Examples

Use the body to represent the molecules, atoms or composition of a cell.

Suggestion

One may choose to make a prior representation of the elements using plastic materials, thus facilitating their visualisation in three-dimensional terms.

6.4. The cake

Turning the intersection of a geometrical solid by a plane into something real, visible and edible. This is a pivotal question and one that is not always easy to assimilate. By associating this subject-matter not only with a real object, but also with an object that the students like, one can construct a visible relationship and a sweet memory of this not always fully appreciated content.

Example

A lesson in which this micropedagogy was used can be seen here: <https://vimeo.com/oantoniopedro/o-bolo>.

6.5. Do you think you can stay stable?

There are four teams that have been given the names of certain atoms, according to the number of electrons. Each team has to organise its atom, taking into account its electron configuration. The aim of each team is to make its atom stable, forming the corresponding ion. The first team that manages to make its atom stable wins the game and withdraws from the competition, but the game continues until all the atoms are stable. To obtain the electrons that are missing from the atom, it is enough to touch the shoulder of the person who corresponds to the required valence electron, which then means that this electron belongs to the atom that needs it. During the game, four radiations will be directed towards the various atoms and will remove



The cake

their valence electrons. These radiations will be directed towards one atom at a time, only once per game. When a radiation removes an electron from an atom (by touching the shoulder of the respective person), this electron leaves the atom and moves away from it and from the others, waiting until it is needed again. In order to obtain this electron, it is enough to touch the shoulder of the corresponding person, and this electron then belongs to that atom. The four elastic bands will be used to mark out the boundaries of each atom.

6.6 Emission/Absorption

The rungs of a ladder symbolise different levels of energy. A student representing an electron takes up position on a rung. For each student-electron, there is a student that provides energy in the form of sound (a continuous AAAAAAA, for example). As the student emits a sound, their classmate-electron moves up the rungs and only stops when the sound ends (the phenomenon of absorption). However, as everything in nature tends towards minimum energy, the electron ends up returning to its initial state (a lower rung), emitting the energy that it had previously received (the phenomenon of emission), which may be done in just one go (continuous movement and sound), or in a series of small movements (one rung at a time and with short sounds).

Note

The experiment can be done using more than one electron at the same time.

Variant with light

The student who is emitting energy, uses a torch instead of a sound to symbolically provide the student-electron with energy. The student-electron also has a torch and, when returning to the initial level, emits light with their torch. This activity requires a room which can be blacked out easily.

6.7. Distribution of electrons: the Bohr model versus the present-day atomic model

This activity must be undertaken after the exposition/revision of the different atomic models and the teaching of the rules for the distribution of electrons according to these models.

An atom must be chosen with an atomic number that is equal to or lower than the number of students.

Example

30 students-zinc. Each student will have a number (this may be their student number or pieces of paper can be distributed). The teacher indicates the model that is to be used – for example, “distribution of electrons in a zinc atom, according to the Bohr model”. The first rung of the ladder represents the level of least energy, and, at this level, there can only be two electrons (two students with the numbers 1 and 2). Only after this level has been filled can students begin to occupy the second rung of the ladder. There can be eight electrons at this level (students with the numbers 3 to 10). The experiment continues with the ordered filling in of the various levels of energy.

The experiment can be repeated with the present-day atomic model,

placing two students in the orbital 1s, two in the orbital 2s, and so on.

Variant in silence

After some examples of filling in the energy levels, guided by the teacher, the students are challenged to perform the same exercise, but in silence and without any guidance. This variant is intended to promote concentration and individual responsibility within the group (each student has to know their place in the group).

Note

In the absence of a ladder, the experiment can be undertaken in the classroom, attributing a level of energy to each row and using an atom with a lower atomic number.

6.8. Vectors

The class and teacher stand in a circle. One student (A) begins by saying the name of another student (B) and, at that same moment, moves towards him or her. B needs to name another person (C) – towards whom he or she will then walk – before A arrives, freeing up a place in the circumference that A will then occupy. In turn, B will take C's place, and so on. Once the game has been mastered, the students' movements (from A to B, from B to C...) are now defined as vectors. What one has here are lines that are defined by a certain meaning, direction and length, so that, based on the students' movements, it is possible, for example, to work on operations with vectors, addition, subtraction and product of a whole number.

Suggestion

Installing a camera in the ceiling, offering a bird's eye view perpendicular to the line drawn on the floor, makes it possible to view the movements of the students, facilitating the recognition of the vectors.

6.9. Symmetry/Mirror

A line representing one of the axes (x or y) is drawn on the floor using gummed paper tape. The students form pairs and each of them occupies one end of the line, facing each other. This line will represent a mirror, which means that one of the students represents certain movements (taking into account the high, central and low planes), while the other reproduces them. In the course of the activity, the students swap roles or pairs. Moments are established when the activity will be briefly halted, at which point the students will be symmetrical in relation to the line that was originally drawn, thus revealing the axis. It is in this context that the coordinates of the symmetrical points will be found, to be determined by the positioning of the students.

Suggestion

Once again, installing a camera in the ceiling may facilitate learning.

6.10. Clothesline

Previously, installed and intended to surprise the students, this clothesline is designed to create a Cartesian reference frame. A certain point must be chosen that is roughly 150 centimetres above the floor.

This point represents the origin of the reference frame and it is where the three perpendicular axes intersect, each of which is represented by a string of a different colour (two strings will be fixed between opposite walls, and the third will be fixed between the ceiling and the floor).

This structure will make it possible to circulate in the space and it will be further complemented by the use of pegs and post-its that mark the point of origin, the orientation of the axes and the respective scale. This clothesline also makes it possible to identify the octants and the coordinate planes.

Suggestion

After the "corporisations" of the various concepts, the students can be invited to work in small groups with the aim of conceiving and developing creative games that reflect a certain pragmatic content. These will later be tested and assessed by all concerned, and may even be used in other classes at the school.

6.11. Symbolic simplification

In a History lesson, in which an excerpt from *The Iliad* was read and analysed, in order to understand the complexity of the lexicon and the narrative progression, a simplified version of the story was produced, creating a metaphor with materials from the classroom. The actual copy of *The Iliad* itself (which was particularly voluminous and visible) became the wall of the city of Troy; pencils became the Greeks; various pens represented the Trojans; some rubbers became the women (on both sides of the conflict); scissors were used as gods. Using these materials, the following scenes were enacted: the kidnapping of Helen, the siege of Troy, the anxiety and the warnings of Cassandra, the divine intervention and the return of the warriors, as well as other episodes from the Trojan War, as described in Homer's work.

Note

This micropedagogy can be used to explain various other contents, from historical events to scientific phenomena.

**Characteristics of the situation/
problem for which the strategy
was conceived**

Fighting the tendency towards a lack of attention and concentration on the part of the students, stimulating critical and analytical observation. Developing an interest in writing and implementing its practice.

Intention/aims

To promote an attentive attitude and awaken students to the world around them. To challenge them to question and search for answers through the keeping of an informal and stimulating record. To awaken students to the experience of the world as a source that generates stimuli for the senses and knowledge. To create material supports for the use of different types of graphic records, which the students can then take ownership of. To use different forms of mapping and recording information.

Resources used

Internet. Recording and writing material. Scissors, glue, texts, images.

**Sources/references used in the
construction of the pedagogical
proposal**

Exercises relating to drawing, collage and writing. Influence of notebooks and sketchbooks.

Syllabus contents worked upon

Descriptive synthesis and narrative synthesis. Different types of texts and literary genres. Scientific texts from the different areas of the syllabuses for the various subjects. Lyric poetry and twentieth-century poets (lyric mode/genres, sounds, elements that structure meaning). Citizenship training: knowledge of oneself and others.

**General description
of the activities**

Constructing instruments that can be used for the individual recording of information and that reflect the students' identity and encourage them to permanently focus their senses, increasing their acumen and helping them to take ownership of the world, developing their aesthetic sensitivity and the search for knowledge. This activity results in the creation of a space of individual freedom where they can bring together and organise their experiences, so that it should be used in a transversal form with the aim of stimulating different areas of knowledge.



Autobiographies



Field notebooks

7.1. Polyphonic graphic diaries

Each student is encouraged to develop a personal graphic diary that cuts across all school subjects, with stress being placed on the notion that knowledge is not hermetic, and nor is it limited to certain areas of study. This diary is, however, made special by the fact that it consists of a support for the graphic recording of sounds, requiring the student to display a predisposition and an auditory sensitivity to their experience of the world.

Suggestion

Stay in one specific place for some time, keeping your eyes shut and identifying the range and diversity of the sounds around you, their intensities, rhythms and repetitions. Draw that experience as if it were a map.

Based on a map of the school, draw the different sounds perceived throughout the course of one day. Graphically record a piece of music, a conversation, a noise...

7.2. Field notebook

Being similar, in some aspects to the polyphonic graphic diary, the concept of the "field notebook" was also devised to stimulate the practice of observation, analysis and the sensory records made by the students. However, this support is also capable of being expanded to a context that goes beyond the mere recording of sounds, also looking for mundane contents that make an appeal to the observer's focus. Everyday objects, landscapes, still lifes, or the human body itself, may be examples that arouse the interest of students and their subsequent recording of them. The notebook may also contain questions and answers, diagrams, drawings...

Suggestion

When the proposed work is presented, examples of field notebooks can be shown, as well as giving theoretical and practical explanations that clarify the transversal nature of these notebooks and reconcile experiences and learning processes.

7.3. Diary of unusual events

This diary has the particularity of consisting of a material support in which each student should record, on a daily basis, an event that

they consider to be unusual. Described in detail and with great accuracy, these unusual events must arise from the everyday reality of the students and may later be shared with the class.

Suggestion

It can be proposed to each student that they should choose an unusual event and then develop it and transform it into a chronicle, working in this way on the characteristics that define this literary genre.

7.4. My notebook

This notebook is characterised by the circumstance of its being organised into various thematic areas, bringing together some of the proposed micropedagogies and promoting a transversal reading of the learning activities.

Suggestion

The notebook may contain a space set aside for an anthology, a word glossary, loose leaves, graphic elements, wishes, questions...

7.5. Anthology

Using a variety of supports, the students search for and select poetic texts that they consider to be of greatest interest or importance. These should then be transcribed to a notebook, which, in this way, will be transformed into a poetic anthology.

Suggestion

The texts compiled in this way can be extended to other thematic areas, thus making the anthology transdisciplinary in nature.



My notebook

Map/Score of OTS (Objects that tell stories)

Characteristics of the situation/ problem for which the strategy was conceived

Enabling the students to gain a general view of the material that will be dealt with during the school year, transforming the contents of the textbook, its structure and thematic organisation into a map indicating what will be taught and when.

Intention/aims

To develop speaking skills through the idea that the objects that we are connected to can be used to tell stories and reveal each individual's view of the world. To establish links to what is around us, both at the level of technical knowledge and at the level of our emotional connections. To stimulate critical and analytical observation, questioning and research.

Resources used

Internet, videos, various texts, recording and writing material, scissors, glue and images.

Sources/references used in the construction of the pedagogical proposal

Four themes from the English Language textbook: "A world of many languages", "Media and global communication", "The world of technology" and "The world of teens".

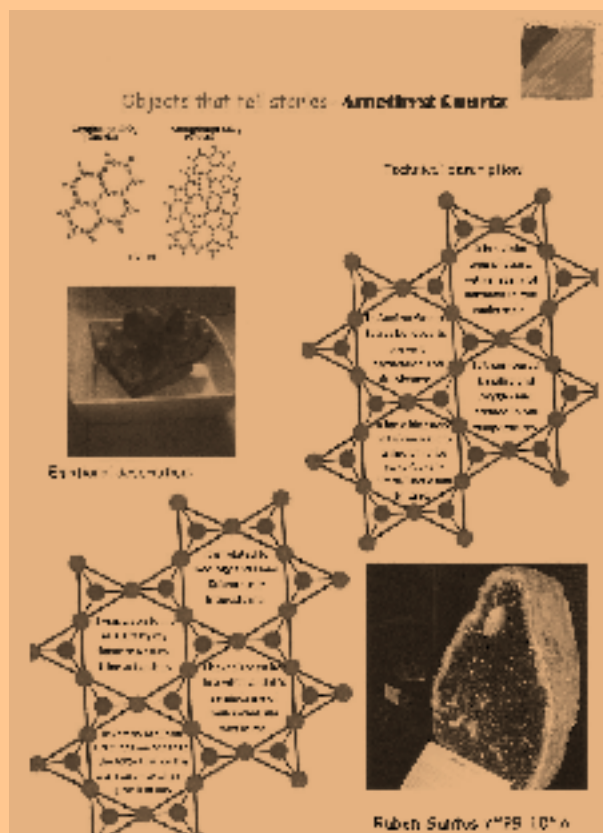
Syllabus contents worked upon

Reading and interpretation of texts, grammar exercises, watching videos, composing biographical and autobiographical texts, listening exercises.

General description of the activities

Each student makes an oral presentation of an object with which they have a significant emotional link. The presentation is subject to some rules, namely: (i) convincing the audience (classmates) of the reason why this object is special; (ii) making a technical description of the object, resorting, for example, to dictionary definitions, historical references, technical instructions, materials, etc.; (iii) making a description of the emotional links to the object.

After the oral presentation, each student must then produce a written work on a sheet of A4 paper, containing: an objective description (a photo and text providing a technical description of the object); an emotional description (a text outlining the student's emotional links to that object) and a "stamp", planned and designed by the students, containing the different thematic units of the textbook.



A4 sheets of paper with descriptions of the objects

I Constructing groups and interpersonal relationships

- 1.1. and 1.3. Conception and development in the classroom by Sofia Cabrita and Maria José Mira
- 1.2. Conception and development in the classroom by Catarina Requeijo, Ana Paula Serra and Ana Gabriela Freire
- 1.4. Conception and development in the classroom by António-Pedro with Ilda Dinis, Paula Reis, Irene Leitão, and by Maria Gil and Maria Bárcia
- 1.5. Conception and development in the classroom by Aldara Bizarro and Ana Margarida Magalhães
- 1.6. Authorship Manuela Ferreira

Authorships

It is important to legitimise the authorship of the micropedagogies as devices that were invented or reinvented through their creative transfer to the classroom and which are geared towards the learning of curricular contents that are different from and unrelated to their original conception and definition. In this way, it seems to us to be pertinent, in this context, to distinguish between two categories of authorship, namely:

Authorship (or co-authorships)

Creation of an autonomous pedagogical device that did not previously exist.

Conception and development in the classroom

Combination and further development of pre-existing ideas and/or devices through their transfer to a context that was different from the one for which they were originally designed and which was determined by the learning of a given subject-matter or a different school subject, resulting in a new strategy and script.

- 2.1. Conception and development in the classroom by Aldara Bizarro and Ana Margarida Magalhães
- 2.2. Authorship Aldara Bizarro
- 2.3. Conception and development in the classroom by Aldara Bizarro and Ana Margarida Magalhães, and by Catarina Lacerda, Maria José Ramos and André Guterres
- 3.1. Conception and development in the classroom by Sofia Cabrita and Maria José Mira
- 3.2. Conception and development in the classroom by Aldara Bizarro and Ana Margarida Magalhães

- 4.3. Conception and development in the classroom by Rosinda Costa and Maria João Avelar
- 5.1. and 5.2. Re-creation and development in the classroom by Aldara Bizarro and Ana Margarida Magalhães

II Promoting attitudes of motivation, attention and concentration that facilitate learning

- 3.1. Conception and development in the classroom by Maria Gil and Maria Bárcia
- 1.1. Conception and development in the classroom by Maria Gil and Maria Bárcia
- 1.2. Conception and development in the classroom by Catarina Requeijo, Ana Paula Serra and Ana Gabriela Freire
- 4.1. Conception and development in the classroom by Miguel Horta and Ana Margarida Nunes
- 4.2. Authorship Manuela Ferreira

1.3. Co-authorship Catarina Lacerda, Maria José Ramos and André Guterres

1.4. Conception and development in the classroom by Aldara Bizarro and Ana Margarida Magalhães

1.5. Conception and development in the classroom by Manuela Ferreira and Gabriel Machado

1.6. Authorship Manuela Ferreira

1.7. Conception and development in the classroom by Catarina Requeijo and Ângela Rebordão

2.1. Conception and development in the classroom by Dina Mendonça

2.2. Conception and development in the classroom by António-Pedro

2.3. Conception and development in the classroom by Catarina Lacerda, Maria José Ramos and André Guterres

2.4. Conception and development in the classroom by Nuno M. Cardoso with Sandra Santos, and by António-Pedro with Irene Leitão

3.1. Co-authorship Sofia Cabrita and Dora Santos

3.2. Authorship António-Pedro

4.1. Conception and development in the classroom by Sofia Cabrita and Margarida Soares

4.2. and 4.3. Authorship

and development in the classroom by António-Pedro, Paula Reis and Maria do Carmo Botelho

4.4. and 4.5. Conception and development in the classroom by Nuno Cintrão and Teresa Alves

5.1. and 5.2. Conception and development in the classroom by Elisabete Magalhães and Paula Cruz

6.1. Conception and development in the classroom by Sofia Cabrita and Margarida Soares

6.2. and 6.3. Conception and development in the classroom by Hugo Barata and Maria João Mineiro

6.4. Co-authorship Sofia Cabrita and Maria José Mira

7.1. and 7.2. Conception and development in the classroom by Catarina Requeijo and Ângela Rebordão

7.3. Co-authorship Simão Costa and Mabel Carrola

7.4. Conception and development in the classroom by Miguel Horta and Ana Margarida Nunes



Facilitating the learning of subject/curricular contents

1.1. Authorship Miguel Horta

1.2., 1.3. and 1.4. Conception and development in the classroom by Sofia Cabrita and Maria José Mira

2.1. Conception and development in the classroom by João Girão and Isabel Machado

2.2. Conception and development in the classroom by Sofia Cabrita and Maria José Mira

2.3. and 2.4.2. Conception and development in the classroom by Catarina Requeijo and Ângela Rebordão

2.4. and 2.4.1. Conception and development in the classroom by Sofia Cabrita and Margarida Soares

3.1. and 3.6. Conception and development in the classroom by Rosinda Costa and Maria João Avelar

3.2. and 3.7. Conception and development in the classroom by Sofia Cabrita and Maria José Mira

3.3. Authorship Sofia Cabrita

3.4. Conception and development in the classroom by Manuela Ferreira and Gabriel Machado

3.5. Conception and development in the classroom by Maria Gil and Maria Bácia

4.1. Conception and development in the classroom by António-Pedro and Ilda Dinis

4.2., 4.3., 4.4., 4.5. and 4.6. Conception and development in the classroom by Aldara Bizarro and Olga Esteves

4.7. and 4.8. Co-authorship Catarina Lacerda and Maria José Ramos

5.1. Authorship Miguel Horta

5.2. Conception and development in the classroom by Miguel Horta and Ana Margarida Nunes

5.3.1. Conception and development in the classroom by António-Pedro and Ilda Dinis

5.3.2. and 5.3.3. Conception and development in the classroom by António-Pedro, Ilda Dinis, Paula Reis and Maria do Carmo Botelho

5.4. Authorship António-Pedro

5.5. Conception and development in the

classroom by Catarina Requeijo, Ana Paula Serra and Ana Gabriela Freire

5.6. Authorship Manuela Ferreira

6.1. Authorship Margarida Mestre

6.2. Conception and development in the classroom by Miguel Horta and Ana Pereira

6.3., 6.5. and 6.6. Conception and development in the classroom by Catarina Requeijo and Ângela Rebordão

6.4. Conception and development in the classroom by António-Pedro, Paula Reis and Maria do Carmo Botelho

6.7. and 6.8. Conception and development in the classroom by Nuno M. Cardoso and Sandra Santos

6.9. Authorship Teresa Alves

6.10. Authorship Catarina Requeijo

7.1. Conception and

development in the classroom by Ricardo Jacinto

and Mário Linhares

7.2. Conception and development in the classroom by Hugo Barata and Maria João Mineiro

7.3. Conception and development in the classroom by Rosinda Costa and Maria João Avelar

7.4. and 7.5. Co-authorship João Girão and Isabel Machado

8. Co-authorship Simão Costa and Mabel Carrola

Micropedagogies

Coordination

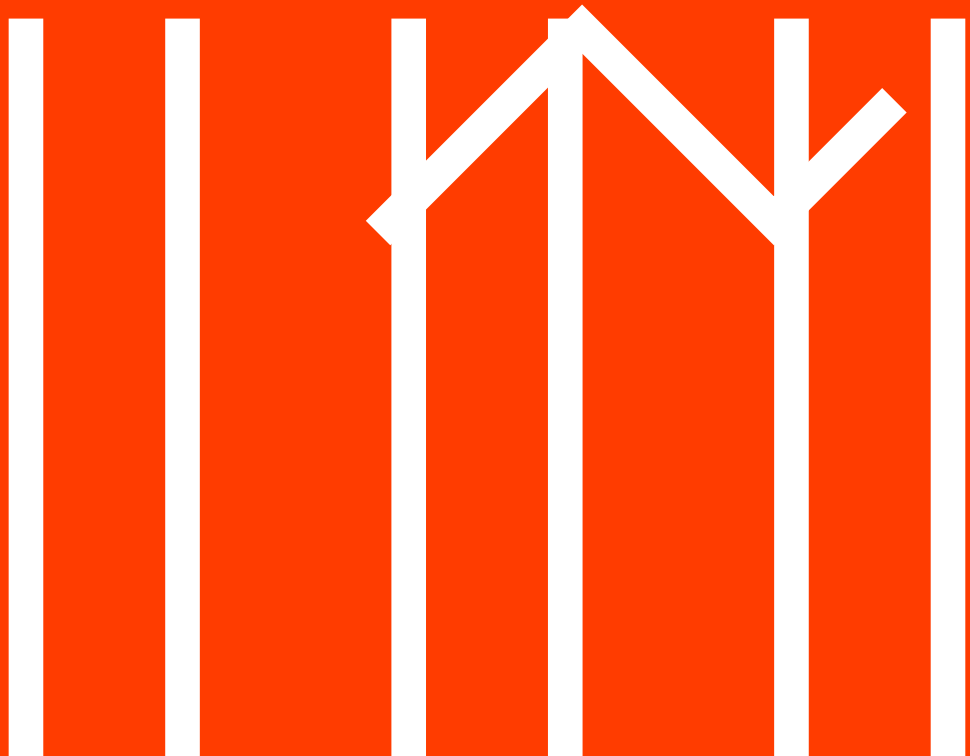
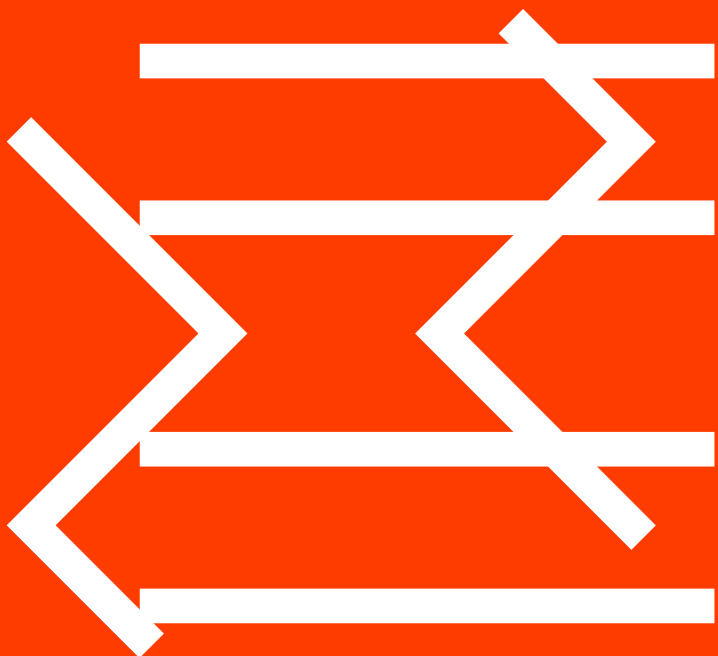
Adriana Pardal
Judith Silva Pereira
Maria de Assis

Editors

Diana V. Almeida
Irina Duarte

Other participants

Ágata Mandillo
Ana Leite
Ana Luísa de Oliveira Pires
Ana Maria Fernandes
António Joaquim Martins
António Jorge Gonçalves
Elisa Moreira
Elisabete Xavier Gomes
Francisco Estorninho
Isabel Nunes
Luís Costa
Lurdes Henriques
Manuela Aguiar
Maria Eduarda Carnot
Maria Glória Pombo
Mariana Cansado
Paulo Jorge Torcato
Pedro Miguel de Jesus
Pedro Sena Nunes
Teresa N. R. Gonçalves





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