History teaching based on the theory of Multiple Intelligences: The story of an action research case study

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Abstract

Within the framework of concerns about ensuring inclusion and equity of opportunities for school access and success, an action research was developed within the context of the professional practice of a teacher training course in Portugal. This (case) study consists of exploratory action research regarding the didactic-pedagogical mobilization of Gardner's theory of Multiple Intelligences within the framework of history teaching in Portuguese secondary education. The research aimed to assess the relevance of a teaching-learning strategy based on Gardner's theory in this localized study context. A mixed methodology was used for the data collection (questionnaire survey and documental analysis), with a tendentially qualitative data analysis. The sample consisted of 58 students from two school classes. The results suggest the relevance of the implemented approach, with gains for students in motivation, performance, and outcomes. It was also found that students perform more significantly when they act according to their intellectual predispositions.

Nel quadro delle preoccupazioni relative a garantire l'inclusione e l'equità delle opportunità di accesso e successo scolastico, è stata sviluppata una ricerca-azione nel contesto della pratica professionale di un corso di formazione per insegnanti in Portogallo. Questo (caso) studio consiste in una ricerca-azione esplorativa riguardante la mobilitazione didattico-pedagogica della teoria delle Intelligenze Multiple di Gardner nel quadro dell'insegnamento della storia nell'istruzione secondaria portoghese. La ricerca mirava a valutare la rilevanza di una strategia di insegnamento-apprendimento basata sulla teoria di Gardner in questo contesto di studio localizzato. Per la raccolta dei dati è stata utilizzata una metodologia mista (indagine tramite questionario e analisi documentale), con un'analisi dei dati tendenzialmente qualitativa. Il campione era composto da 58 studenti provenienti da due classi scolastiche. I risultati suggeriscono la rilevanza dell'approccio implementato, con vantaggi per gli studenti in termini di motivazione, prestazioni e risultati. È stato inoltre riscontrato che gli studenti ottengono risultati più significativi quando agiscono secondo le loro predisposizioni intellettuali.

Keywords: Multiple Intelligences; history; inclusion; pedagogical differentiation; action research

Parole chiave: Intelligenze Multiple; storia; inclusione; differenziazione pedagogica; ricerca-azione

DOI: https://doi.org/10.6092/issn.1970-2221/20013

1. Introduction

Issues concerning inclusion, social justice, and equality of opportunities to access quality education have topicality in educational research (Fedeli, 2021; Hayvon, 2024; Lazzari, 2017) and in the international education agenda. For example, UNESCO (2016), within the framework of *Education 2030*, organized in partnership with other reference institutions, states that guaranteeing access to quality education and ensuring equity and inclusion in and through education are fundamental goals for education. To pursue these goals, combating educational inequalities and promoting "learning ability" in young students, Darling-Hammond (2024) argues that it is necessary to reinvent education systems. The author suggests that schools should "become more student-centered and supportive of whole child development", "focused on deeper learning that meets the demands of today's society", and "equitable in the opportunities provided and outcomes achieved" (Darling-Hammond, 2024, p. 214). Darling-Hammond (2024) also emphasizes the teachers' role in this process, within the framework of what she calls as "powerful teaching".

With these goals in mind, we utilized a specific research context – the initiation to professional practice within the scope of a master's degree in Teaching History, in Portugal – to carry out an action research that sought to ensure greater inclusion and equity of opportunities and outcomes for students through a pedagogical approach based on Gardner's (2011) *Theory of Multiple Intelligences* (MI). So, this article is based on an exploratory action research, carried out in order to assess the potential and the limitations of a didactic-pedagogical approach based on MI, applied to the pedagogical process of history in the secondary education, in Portugal.

MI was presented by Gardner in 1983 and, despite the reservations with which it was received in the field of psychology (Almeida et al., 2009; Deary, 2001; Rousseau, 2021), it was well received in the field of education (Gardner et al., 1996). Since then, several studies have been developed and published on the theory's implementation in educational contexts (Armstrong, 2000; Batdi, 2017; Campbell et al., 1996).

According to MI, intelligence is not a one-dimensional factor but a biopsychological, multidimensional potential that allows us to solve problems, problematize, and create culturally valued products (Gardner et al., 1996). In this sense, Gardner (2011) outlined eight intelligences, relatively independent, that all individuals possess but whose prevalence varies from person to person, namely (Gardner, 2011):

i) *Linguistic* – encompasses the ability to use language for various purposes (arguing, persuading, telling stories, writing, teaching, etc.), manipulating and structuring the meanings and functions of words.

ii) *Musical* – encompasses the ability to create, communicate, and understand meanings through sounds, integrating sensibilities to rhythms, melodies, tones, and timbres.

iii) *Logical-mathematical* - encompasses the use and appreciation of abstract relationships and includes the predisposition to establish patterns, logical relationships, and cause-effect relationships, to calculate and test hypotheses, and to conduct experiments.

iv) *Visual-spatial* – encompasses the ability to perceive subtle visual details and to create and recreate images, despite not being dependent on visual sensation (due to the ability to construct mental images, e.g., through words or impressions). It is also related to the resolution of spatial problems and to the sense of orientation.

v) *Bodily-kinesthetic* - encompasses the use of the body to solve problems, express emotions, or create products, manifested by control over large and fine motor actions and the ability to manipulate external objects. Includes specific physical abilities (e.g., coordination, balance, dexterity, strength, flexibility, or speed), as well as proprioceptive and tactile skills.

vi) *Intrapersonal* - encompasses self-knowledge and the ability to act accordingly, and contains the ability to differentiate feelings, personal emotional states, intentions, temperaments, and inner desires.

DOI: https://doi.org/10.6092/issn.1970-2221/20013

vii) *Interpersonal* - encompasses the ability to perceive and distinguish the moods, intentions, motivations, and feelings of other people, as well as the ability to work and relate to others.

viii) *Naturalistic* - encompasses the ability to understand and work effectively in the natural world, through observing patterns and identifying and classifying objects and/or living beings.

Even though these intelligences are considered independent, any minimally complex human activity requires them to act simultaneously and complementarily (Gardner, 2011). Furthermore, although different intelligences and intellectual profiles have a hereditary origin, they develop according to the environmental conditions and learning opportunities promoted by a given culture (Almeida et al., 2009). Thus, the individual's intellectual profile is dynamic and shaped by socialization. Campbell et al. (1996) point out that, although creativity can be expressed in all intelligences, most people excel in one or two intelligences, and may be less proficient in others. This variability explains intellectual differences between individuals (Gardner et al., 1996).

With MI, Gardner sought to synthesize the intellectual capabilities shared by all humans (considered universal), reinforcing an intercultural perspective on human cognition (Campbell et al., 1996). So, it surpasses the abilities considered, academically, to be intellectual and those valued in the Western context. And with the advances promoted by Artificial Intelligence, which will be able to master logical-mathematical, linguistic, and spatial aspects with greater efficiency than human beings, who knows if other skills, such as bodily-kinaesthetic or personal abilities, may not be more valued in the future, as they have been in the past?

Thus, MI can favour educational inclusion, not only for students with some disability, who will be able to compensate with other intellectually valued skills, but also for students from different geographical and cultural areas, who will be able to learn and express themselves more naturally in contexts that are foreign to them. This inclusion could, moreover, contribute to promoting fair equality of opportunities, which supersedes mere formal equality (Bolívar, 2012), mitigating arbitrary innate inequalities related to the starting social positioning of individuals or with their natural abilities and innate talents (Rawls, 2009; Van Parijs, 1997).

MI encourages a tendency towards curricular, didactic-pedagogical, and evaluative differentiation in order to address each student's characteristics (Heacox, 2001; Shearer, 2020), seeking to promote a most effective inclusion for all. In this sense, and after perceiving the results of applying his theory in the educational field, Gardner (2011) summarized the two MI's main educational implications: teachers should *individualize* and *pluralize* the teaching-learning process. *Individualize* in order to recognize the students' intelligence profiles and act in conformity with it; and *pluralize*, teaching what is relevant in different ways, so as not to leave any student behind.

However, despite this student-centered approach being decisive for equal opportunities for academic success, access to powerful, substantive knowledge is also determinant to guarantee this ideal of social justice (Young, 2011). And history is one of the subjects capable of providing this "powerful knowledge" (Young, 2021), particularly when associated with the development of a systematized grammar related to historical thinking skills, such as Seixas & Morton's (2013) *Big Six historical thinking concepts*.

Still regarding school success, Bernstein (2000) highlights the importance of students mastering the *rules of recognition* and the *rules of realization* in any pedagogical interaction, under penalty of not being able to perform satisfactorily. Thus, in specific classroom contexts, students are successful in a given task when they: recognize the specificity of the micro-context of that practice; select the meanings appropriate to that micro-context (passive realization); produce the proper text within the scope of the task (active realization); have socio-affective dispositions (motivations, values, aspirations) favourable to that realization (Morais & Neves, 2007).

As not all students have the same mastery of school grammar (Bourdieu & Passeron, 1992), an approach that values each person's specific intellectual abilities may be relevant. It is pertinent, then, to verify whether schools,

DOI: https://doi.org/10.6092/issn.1970-2221/20013

when speaking a language that is in line with the intellectual predispositions of all students and not just one that meets linguistic and logical-mathematical capabilities, as, according to Gardner (2011), is the norm, will be able to be understood more effectively, fairly, and inclusively.

2. Study context (academic, research and curricular)

The action research was carried out within the framework of the initiation to professional practice under a master's degree in *Teaching History* in Portugal, which explains the exploratory nature of the study (due to its contextual limitations). The strategy was implemented in two secondary education classes, in the 11th grade, within the framework of History A, a central subject of the *Arts and Humanities* course, one of the four options of the *Scientific-Humanistic* courses that characterize Portuguese regular secondary education, which ranges from the 10th to the 12th grade of schooling. These classes, from a school located in an urban zone of the Porto metropolitan area, had 29 students each, making the 58 students involved in the research (26 boys and 32 girls).
In Portugal, the educational system has, since the 2017/18 school year, the document Profile of Students Leaving Compulsory Education (PASEO) (Martins et al., 2017) as its curricular, pedagogical, and evaluative reference, which seeks to point "to a school education in which students of this global generation build and consolidate a scientific and artistic culture with a humanist basis" (p. 10, auth. trans.). The document, which meets the international educational agenda (Council of Europe, 2016; OECD, 2018; UNESCO, 2016), seeks to present a broad, critical, inclusive, and democratic vision for education, pointing to a series of values and competences to mobilize. This educational situation contributed to the implementation of an action research based on MI, as PASEO largely mirrors Gardner's theory, as it results from a vision that surpasses linguistic and logical-mathematical capabilities. For instance, PASEO defines ten areas of key competences to develop in all school subjects - involving complex combinations of knowledge, skills, and attitudes -, which require mastery of all the intelligences defined by Gardner, as shown in Table 1.

Table 1. Relationship between PASEO's areas of competence and MI (adapted from Duarte, 2019)

PASEO's areas of competence	Intelligence(s) predominantly requested
Languages and texts	*Linguistic* (and use of symbolic codes from other intelligences)
Information and communication	*Linguistic* and *Interpersonal*
Reasoning and problem solving	*Logical-Mathematical*
Critical thinking and creative thinking	*Logical-Mathematical* (and all others particularly in the creative dimension)
Interpersonal relationship	*Interpersonal*
Personal development and autonomy	*Intrapersonal*
Wellbeing and health	*Intrapersonal and Naturalistic*
Aesthetic and artistic sensitivity	*Musical, Visual-spatial* and *Linguistic*
Technical and technological knowledge	*Logical-Mathematical* and *Bodily-Kinesthetic*
Awareness and mastery of the body	*Bodily-Kinesthetic*

Note that any competence area requires the mobilization of several intelligences simultaneously due to its complexity. In Table 1, it was intended to highlight those that are essential for effective mastery of each competence. Nonetheless, the subject situation presented challenges at the time of the study, as students perceived history, as a rule, as unappealing, too theoretical, and with little relevance to their daily lives. The results of the external

DOI: https://doi.org/10.6092/issn.1970-2221/20013

summative assessment tests, which have a bearing on access to higher education, have reflected this perception. In the five years preceding the research, the average grades in national terms had been negative in four. Therefore, history teachers would face two significant challenges: motivating students to the subject and promoting substantive subject learning (Duarte, 2019). Bringing these two dimensions together is a demanding task, but the action implemented within the research framework sought to execute it, mobilizing MI to the didactic-pedagogical process.

3. Aims of the study

The central aim of the study was to explore the relevance of a didactic-pedagogical approach based on MI for teaching history in the Portuguese secondary educational panorama. This central focus and the idealized action raised other complementary issues, summarized in the following research questions:

i) What are the predominant intellectual predispositions of the students involved in the study?
ii) Is it possible to take these intellectual predispositions as predictors of students' intelligence in a certain dimension of MI scope?
iii) Are there differences in students' performance and motivation when they work according to their intellectual predispositions?
iv) Do the didactic-pedagogical implications of MI suggested by Gardner impact students' performance?
v) What is the impact of mobilizing MI as the basis of the didactic-pedagogical process on the students involved in the study within the scope of History A?

This study did not intend to validate Gardner's theory in the field of psychology nor to seek generalizations resulting from its implementation. The aim was, instead, to promote informed action, which would support inclusive and equitable education, promoting equal opportunities for effective academic success, through pedagogical differentiation that would not negatively affect the acquisition of substantive knowledge. This action would be part of a specific educational and subject context. These specificities revealed a promising potential for approaching MI, which, in turn, met the objectives of the action.

The research was markedly exploratory, following the mentioned research questions, in order to analyze the data taken from the particular context of the study and discuss possible educational implications arising from the results obtained in the action research for similar or complementary contexts.

4. Methods

To implement this exploratory action research, we used a mixed methodology, with an explanatory sequential design (Creswell & Creswell, 2018). This action research promoted a solution-oriented approach, seeking to respond to a problem based on empirical and systematized data (Amado, 2017; Freebody, 2003). We promoted a spiral approach, where we identified problems, collected data, developed actions based on the data obtained, refined the problems, and took evidence from the action research that allowed us to obtain results/knowledge that raised reflections on potential improvements to implement in teaching and learning. It had an exploratory character due to the context in which the research was carried out and because it functioned more as an exploration of the potential effects of the action rather than a definitive implementation strategy.

We initially used quantitative methods to collect the data, with the implementation of a questionnaire survey and, subsequently, qualitative and quantitative (partially), with the analysis of pedagogical material produced by students and the analysis of their grades during the assessments carried out throughout the process, respectively. Data analysis was markedly qualitative.

DOI: https://doi.org/10.6092/issn.1970-2221/20013

Stage 1 – Identification of students' intellectual predispositions (research question i)

We applied a Likert-type questionnaire to identify the intellectual predispositions of each student, with a gradual scale of 4 hypotheses, which would measure the frequency of manifestation of the items in the individuals' actions. The 64 items in the questionnaire (8 *per* intelligence)[1] were constructed based on previous works by Armstrong (2000), Campbell et al. (1996), and Heacox (2001). The questionnaire survey did not work (nor could it) as a psychometric intelligence test, since multiple intelligences are not quantifiable (Gardner, 2011). It served as an instrument for predicting intellectual predispositions in a given area, which could be indicators of significant potential intelligence in that area.

Stage 2 – Validation of defined intellectual predispositions (research questions ii and iii)

At this stage, students were invited to carry out creative work, at home, related to an issue of their choice within the theme of Liberalism, where they highlighted striking characteristics of the artistic style under study at the time – Romanticism. The task involved weak framing on the part of the teacher (Bernstein, 2000), with students having significant control over the content selection and its implementation. No conditions were placed on the nature of this realization, which could consist of texts, diagrams, drawings, paintings, musical performances, dramatizations, etc. At this point, the students were unaware of the results of the questionnaire survey and had no idea which intellectual predispositions were most evident according to it. Furthermore, as mentioned, they were not guided to develop their task according to any type of predisposition and were free to choose the way they considered convenient in order not to condition their responses. They were simply informed that they would have a significant pool of possibilities to perform.
Regarding evaluation, broad criteria were defined, reinforcing this weaker framing, divided into four dimensions: creativity; coherence of the historical context; ability to explore principles of Romanticism; and substance of the contents, considering the final product. The orientation of the assessment was towards presences and not absences, thus denoting the task's a more competence-centered than performative nature (Bernstein, 2000). In addition to mastering the content, with this exercise, students should mobilize some key skills in *historical thinking*, such as establishing historical relevance and adopting historical perspectives (Seixas & Morton, 2013).
With this task, it would be possible to understand whether students, when they have greater freedom of action, tend to act under their intellectual predispositions and whether differences are noticed in terms of performance when they do it. If significant differences were noted, the identification promoted by the questionnaire survey would prove to be adequate, and didactic-pedagogical work based on MI would be pertinent.
At this stage, we analyzed the content of the work presented by students in the task, and we considered the potential relationship between this content and MI. We also considered the scores of the students' assessment in the task.

Stage 3 – Implementation of a didactic-pedagogical method based on MI (research questions iv and v)

At this stage, and having already validated an approach based on MI, we sought to meet the implications that Gardner defined regarding the pedagogical implementation of MI – to *individualize* and *pluralize* the teaching-learning process. This phase was implemented within the scope of the theme of new aesthetic styles at the turn of the century (19th to the 20th), and there was a promoted stronger framing on the part of the teacher.
In terms of action, we promoted an *individualization* of the didactic-pedagogical process in the 11th X. We organized the class into small groups, resulting from the different intellectual predispositions of the students, and the students worked, produced content, and were evaluated according to these predispositions. For

DOI: https://doi.org/10.6092/issn.1970-2221/20013

example, students with a bodily-kinesthetic tendency had the opportunity to perform a drama, while others with greater linguistic skills were encouraged to focus on literature. In the 11th Y class, the teaching-learning process was based on *pluralization*. The contents were covered broadly and comprehensively. At the end of the intervention, both classes carried out a formative assessment test, with a more performative logic, to verify the scope of the approaches in terms of assimilation of substantive content. In terms of research, we considered, in this context, the students' grades in this instrument, along with the content analysis of their works.

At this stage of the research, the students worked, preferably, with didactic resources based on primary sources, and they were the ones who built their knowledge regarding the topic. Thus, it was possible to mobilize several key *historical thinking* skills, such as establishing historical relevance, inferring evidence from primary sources, perceiving continuity and change, problematizing causal relationships, and adopting a historical perspective (Seixas & Morton, 2013).

In terms of research, we took the data from the analysis of content and the students' grades in the proposed assessment instruments.

We carried out the study without jeopardizing the normal functioning of the teaching activities of those involved, conducting the research in the context of pedagogical action. Therefore, we decided not to create any control group since the research was not experimental or confirmatory, nor did it intend, as mentioned, to scientifically validate MI. It was research resulting from an action with a pedagogical and exploratory goal. Ultimately, we obtained some analytical control by comparing the students' academic grades in the subject outside the context of the intervention with those obtained throughout the intervention.

Below, we present the results according to the research questions and the different stages of the investigative action.

5. Results

The research results are relevant and point to significant benefits of mobilizing a teaching-learning method based on MI in the context of history teaching. Despite the limitations of the sample due to the research context, the evidence raised is consistent. The results are presented following the path outlined in this intervention.

Stage 1

We found from the questionnaire survey that students, based on their intellectual predispositions, usually revealed two predominant intelligences – specifically, in terms of average, 2.2 predominant intelligences *per* student in 11th X, of which 1.2 evidenced more clearly, and 2.4 in 11th Y, with 1.2 intelligences more clearly evidenced *per* student. These results are in line with those presented by Campbell et al. (1996), who argue that each individual stands out, as a rule, in one or two intelligences.

It is possible to discern a predominance of personal intelligence – intra and interpersonal – and a lower logical-mathematical competence in both classes by reading each class's intellectual predispositions and relating them with MI. This was expected, as they were students in the *Arts and Humanities* course, which is more focused on humanities and social sciences and away from experimental sciences and math. The lower competence in logical-mathematical reasoning was evident throughout the school year, with students presenting difficulties in dealing with chronologies, relating different sources of information, and establishing cause-effect relationships (Duarte, 2019). Even so, we found some differences between the classes: while class X, the most irreverent, revealed a certain naturalistic tendency, provided by ecological concerns, a taste for the outdoors, and some ease of adaptation to environmental contexts, class Y, sober, revealed a more significant musical and linguistic

DOI: https://doi.org/10.6092/issn.1970-2221/20013

tendency, denoting a more artistic character, enhanced, perhaps, by his considerable intrapersonal predispositions (Duarte, 2019).
After acknowledging the intellectual predispositions of the students involved in the study and outlining an approximation between them and the intelligences proposed by Gardner, it is pertinent to verify the plausibility of this outline.

Stage 2

This stage of the study showed that the students' intellectual predispositions defined from the questionnaire survey could function as indicators of potential intelligence. Even though the instrument could be complemented, for example, with interviews or the analysis of students' academic results, it proved to be a reasonably reliable predictor of intelligence, as students who worked under their intellectual predispositions presented more consistent products than those who opted for an alternative route. In addition, students who worked under their intellectual predispositions performed significantly better than those who did not, as shown in Table 2.

Table 2. Evaluation of the results of the task implemented in Stage 2, based on the intellectual conformity between the work carried out and the intellectual predispositions of the students

Intellectual conformity*	**Poorly demonstrated aptitude (n. of students)**	**Moderately demonstrated aptitude (n. of students)**	**Significantly demonstrated aptitude (n. of students)**	**Average results/score in the assessment (0-20)**
Null	8	8	0	11,3
Partial	1	10	5	14,2
Full	0	3	14	16,8

***** Conformity between the student's intellectual predispositions, considering the questionnaire survey implemented, and the intelligence predominantly requested by the task performed

In terms of intellectual conformity, we considered that: *i*) it would be considered null if a student performed a task in which he did not mobilize his most pronounced intellectual predispositions - e.g. if a predominantly linguistic student performed the task through a painting; *ii*) it would be considered partial if a student performed a task that only peripherally mobilized their most pronounced intellectual predispositions – e.g. if a predominantly musical student performed the task through the written analysis of the work of a specific composer; *iii*) it would be considered full if a student performed a task in which he mobilized his most pronounced intellectual predispositions – e.g. if a predominantly logical-mathematical student performed the task through a statistical analysis of a certain indicator relevant to the time.
Regarding the demonstrated aptitude, we considered the skills demonstrated according to the work performed (regardless of the outcomes/scores obtained in the assessment instrument) – e.g. if a student carried out her work through writing, she would have revealed a significant aptitude if she had a fluid and rich text in its form, style and meanings; she would have demonstrated a moderate aptitude if she had a text without serious flaws but in which she did not showed any type of writing creativity, or stylistic or semantic ability; and she would have demonstrated poor aptitude if her text had significant spelling or syntax errors and did not demonstrate minimally effective writing ability.

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This was an exploratory task, to be carried out at home. Thus, it would have minimal weight on students' final grades. Even so, it was a task well received by the students as only nine did not complete it. So, 85% of the students involved in the study completed the task in a context where homework was not usual.

Note that none of the students with null intellectual conformity demonstrated a significant aptitude for the work they developed. On the other hand, no student with full intellectual conformity revealed a poor aptitude for the work they carried out. Furthermore, of the seventeen students who performed the task mobilizing their most pronounced intellectual predispositions, only three did not demonstrate a significant aptitude for the work carried out.

Concerning the average scores obtained, which has to do with the defined assessment criteria and not with the aptitudes demonstrated, this same variance is noted, with students who worked with full intellectual conformity having much higher scores when compared to the other students, particularly those who revealed no intellectual conformity. Thus, there is significant evidence that students who work under their intellectual predispositions tend to obtain better outcomes, usually demonstrating intelligence. When they do not, they tend to produce less creative work, not revealing this intelligence fully perceptibly. This occurred in the context of a task with a weak framing on the part of the teacher, in which students worked autonomously. Those who worked under their predominant predispositions stood out – being less guided, their particular talents had a more significant weight (Duarte, 2019).

Note that students who showed a less satisfactory performance executed, mostly, tasks that requested the mobilization of linguistic or visual-spatial skills, those that, along with logical-mathematical skills, are, according to Gardner (2011), the most requested in schools, even if these deviated from their main intellectual predispositions. This demonstrates that school grammar can often promote some injustices regarding equal opportunities for success, not only from a sociological perspective, as has been widely discussed (Bernstein, 2000; Bourdieu & Passeron, 1992), but also from an intellectual one, more related to psychology.

Still, working under the respective intellectual predispositions does not guarantee, *per se*, the achievement of quality work. There will be fewer risks, perhaps. However, it is perfectly possible to carry out rich and consistent work in areas that are, on the face of it, less intellectually favorable because, as Gardner (1999) pointed out, creativity typically requires a series of skills that go far beyond talent or predisposition for a given task. It often demands attitude, dedication, and resilience. And it also requires a favorable sociocultural environment to make it sprout.

Comparing the two classes in a task that appealed to an artistic vein, as it should highlight characteristics of Romanticism, the greater artistic inclination of the students in class Y was noted, as the average grade of the class was 15.4 values, compared to the 13.6 of class X.

The diversity of the works presented was remarkable. Some students highlighted the characteristics of Romanticism through musical performances, others through drawings or paintings, others through diaries or letters, others through digital presentations, etc. A more specific look at some of these works highlights the relevance of MI's association with history didactics and pedagogy.

For example, X8, the student with the best mark in the task, who showed remarkable linguistic and interpersonal predispositions, wrote a hypothetical diary of Giuseppe Garibaldi, which expressed the romanticist style through creative and careful writing. She used varied stylistic resources and a language full of subliminal messages, having managed to understand the character she embodied effectively, putting herself in the shoes of a romantic hero. X8 was able to combine historical events with a romanticist narrative (and from a romanticist perspective), as shown below:

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> Who would tell me that I was going to meet the love of my life in Brazil under these conditions? I already felt alone and defeated after the battle of Laguna against the Empire, when I won the greatest of victories. Sometimes, I still think of the great treasure I won, as if it were the prize for my defeat. (Duarte, 2019, p. 117, auth. trans.)

On the other hand, student Y12, who tends to be linguistic, presented a painting that did not reveal significant spatial skills (see Figure 1) but, along with it, delivered a descriptive memoir in which, through a narrative full of meaning, managed to explain in words all the messages that couldn't convey in visual terms. The following is a representative excerpt of this narrative proficiency:

> In the center there is a tower. Not a symbol of any palace, but simply of the superiority of the privileged classes, represented at the top, above everyone else, on a different level of life (from left to right, the clergy, falling from the tower, and King Louis XVI, the nobility and Marie Antoinette), powerless, only seeing the invasion of their privileged world by the starving population. (Duarte, 2019, p. 117, auth. trans.)

Figure 1. The French Revolution, according to student Y12**.** Source: Duarte (2019, p. 117)

Finally, one of the most inquisitive cases was that of student Y28. Y28 was a student with a certain critical sense but who never transferred these skills to the summative assessment tests. Y28 was uninterested, did not take notes in classes, never did any homework, and had a negative grade in the subject. However, in this assignment, this student was the first to hand in the work, which presented a remarkable quality, obtaining a mark of 18.5. The student's work consisted of manipulating a painting of a historical character (see Figure 2), along with the following descriptive memoir:

> My history work portrays some aspects of romanticism using the gallant Lord Byron as a basis. These aspects, as well as the exposure of this same historical figure, are the depreciation of Reason and the praise of a creative spirit centered on individualism, represented by the cephalic lack in the work and an attempt at amateur reproduction of the infamous haze typical of Caspar David Friedrich, which we can find scattered throughout his paintings. From my point of view, this set of

DOI: https://doi.org/10.6092/issn.1970-2221/20013

> characteristics pragmatically establishes a brief amalgamation of some of the historical issues taught in class. (Duarte, 2019, pp. 115-116; auth. trans.)

Figure 2. The romantic hero, according to student Y28**.** Source: Duarte (2019, p. 115)

The student was able to achieve substantive knowledge in the subject, also transposing this knowledge into words, the primary language of history, by being allowed to make use of his intrapersonal reflexive skills and visual/spatial manipulation, with autonomy and without being restricted to a transmissive and performative work logic. This variety of works, as well as some of the specificities highlighted, demonstrates the gains in students' motivation and performance when they can work according to their intellectual predispositions.

Stage 3

At this stage, it was possible to verify that the implementation of the educational implications of MI suggested by Gardner had a positive impact on the students' performance, noticeable both in motivation and acquisition of substantive knowledge, as is reflected in the grades of the assessment instrument applied.
As mentioned above, in class X, the teaching-learning process was *individualized*. We used a "workshop classroom" (Barca, 2004) as a methodology due to its constructivist and meta-cognitive potential, with students divided into small groups according to their intellectual predispositions. We promoted cooperative work, with the students starting from a group logic and then arriving together at general conclusions within the class. We asked the students to use predominantly resources originating from primary sources to construct their knowledge on the subject in small groups and then present their conclusions and work to the class. The works were varied but proved to be very rich. The small groups presented their works through dramatization, series of paintings, poems and other literary texts, digital presentation, timeline (which linked artistic styles with inciting historical events), debate, individual narratives, and music. Afterward, *individualization* also gave way to *pluralization*, with students accessing substantive knowledge in various ways.
The students' results in these assignments were significant, with the overall average mark for the class being a (significant) 16.2. To better understand the substance of these works, see the following representative example (Figure 3), which consists of a painting related to Symbolism, an artistic movement characterized by symbolic

DOI: https://doi.org/10.6092/issn.1970-2221/20013

language associated with the mystical, the dreamlike, the subjective, and the unreal. The students in question presented the characteristics of this artistic style through a painting made according to these characteristics.

Figure 3. The art of Symbolism, according to student X8 from the Amadeo Souza-Cardoso Group**.** Source: Duarte (2019, p. 120)

In class Y, on the other hand, it was promoted a *pluralization* of the teaching-learning process, using several of the resources provided to class X in the context of the workshop but without carrying out any formal assessment. However, at the end of the intervention, a more performative formative assessment test was applied in both classes to assess the acquisition of substantive knowledge related to the topic. As shown in Table 3, the results were significant in both classes, which might reinforce the implications suggested by Gardner.

Table 3. Average scores in the different assessment instruments during the intervention by school class

Class	Grading on the 1st task (0-20)	Grading on the 2nd task (0-20)	Grading on the formative assessment test (0-20)	Grading on the summative assessment tests (0-20)	Final grade in the subject (0-20)
11th X	13,6	16,2	15,3	11,4	13,1
11th Y	15,4	Not applied	15,2	11,9	13,4

The students had significantly better results when they worked in a differentiated context according to their intellectual predispositions within the framework of MI. However, the formative assessment test did not have, nor could it, the usual density of the summative assessment tests, which were organized following the national external summative assessment tests' model. Even so, we verified that the students had efficiently acquired the substantive content.

Moreover, despite its complexity, the assessment of the proposed tasks tended to be competence-centered, focusing more on presences than absences, unlike the summative assessment tests, which tended to be more

DOI: https://doi.org/10.6092/issn.1970-2221/20013

performative. This shows that a didactic-pedagogical approach based on MI favors a pedagogical identity more focused on competences than on performance, which is in line with the spirit of PASEO.

6. Discussion and conclusion

From the analysis of the study, it is possible to conclude that a didactic-pedagogical approach centered on MI applied to the teaching of history can favor students' motivation and learning. So much so that when the students worked according to their strongest intellectual predispositions, they had better performances. When they did not, their performances were not particularly significant. Moreover, although the students were not used to a classroom dynamic based on MI, most of them achieved more significant outcomes in the tasks where this basis was implemented than in the other assessment moments throughout the school year, which were more geared towards the traditional school *habitus*.

Implementing an approach of this kind can make it easier for all students to access the *rules of recognition* and the *rules of realization* in the context of pedagogical interaction, as school grammar is translated into a language that is potentially more familiar to students, also promoting gains in attitudinal, motivational and socio-affective terms, which are essential for efficient performance.

However, teachers must understand and support this translation without missing the essence of the message along the way. In other words, some framing is always necessary. It is worth noting, however, that this positive variation did not just occur among students who found it more complicated to succeed with the traditional method. Even students with good outcomes in the installed model often managed to transcend themselves when there was a differentiated appeal according to their intellectual predispositions. Throughout the study, there was only one exception in this regard.

However, the study was conducted in the context of a subject with a *horizontal structure of knowledge* within the *vertical discourse* (tendentially academic) characterized by weak grammar (Bernstein, 1999), which allows for a significant variability of strategies and approaches to the transmission of this knowledge. The study does not allow us to conclude that if the same approach were carried out in a subject with a *hierarchical structure of knowledge*, such as the experimental sciences, with stronger grammar and more explicit distributive rules, the scope and the results would be the same. Nevertheless, other studies show the positive effects of an approach centered on MI in subjects from hierarchical structures (Ekarika et al., 2022; Emendu & Udogu, 2013; Gurcay & Ferah, 2017).

Although questionnaires, especially those based on learning styles, are not always effective in defining students' multiple intelligences (Rousseau, 2021), the intellectual predispositions defined from the questionnaire survey in this study worked efficiently as an indicator of students' potential intelligences. It is up to teachers to recognize these predispositions in order to plan and act informedly in the classroom, promoting pedagogical differentiation through a balanced approach addressing *individualization* and *pluralization*. Thus, teachers could reach more students and enhance inclusion and equal educational opportunities (and outcomes).

The results obtained in the study corroborate other studies, carried out in different subject areas and diverse socio-educational, cultural, and geographical contexts, on the positive effects of a teaching-learning process based on MI on students' performance and attitudes (Akkuzu & Akçay, 2011; Batdi, 2017; Ekarika et al., 2022; Emendu & Udogu, 2013; Gurcay & Ferah, 2017; Lei et al., 2021; Syafii et al., 2022). This variety highlights the universal potential of MI. Like this one, these studies have focused more on the educational implementation of MI in a given context and the results of this mobilization rather than on validating Gardner's theory. Although some studies suggest this (Shearer, 2020), the divergence in observations regarding this validity is significant (Attwood, 2022). But what stands out from this study are the positive indications generated for the relevance

DOI: https://doi.org/10.6092/issn.1970-2221/20013

of mobilizing MI as a basis for the teaching-learning process within the scope of history, particularly within the framework of the current educational situation in Portugal.

Some critics of Gardner's theory argue that it uses the term "intelligence" abusively, guided more by social than scientific issues, causing intelligence to consider abilities that are not in the cognitive domain (Almeida et al., 2009). Gardner counterargues, defending that the error lies in having a reductive and westernized notion of intelligence (Gardner et al., 1996). As mentioned, we did not intend to address the debate regarding the concept of intelligence, but to understand the impact of mobilizing Gardner's theory for the pedagogical process. It was possible to perceive the potential of this impact, regardless of whether the proposal refers to multiple intelligences or multiple talents. MI should not be seen as an end but as a means to reach all students, and act in accordance with the intellectual particularities of each one.

The context in which we carried out the study entailed several research limitations. First, in Portugal, at the time, trainee teachers only taught 40 hours of lessons in the school year, under the supervision of a head teacher. In addition, their assessment was mainly based on their performance in the lessons they taught. These aspects limited the study's investigative potential both in terms of time and logistics. It did not allow for a more continuous and comprehensive approach to potential transformations in didactic-pedagogical practice and to verify its effects. Then, the dimension and specificity of the sample do not allow generalizations. These are contextualized results. Even so, the analysis of these results, in addition to those of similar studies carried out in other contexts, can help to provide a more comprehensive picture of the effects of MI on students' learning.

The context of teacher training could be a pertinent environment to carry out further studies, in which research stems from sustained pedagogical action. This study also showed that students achieve better results when they act under their intellectual predispositions. As these are dynamic, it would be relevant to carry out more in-depth and systematic studies that allow us to see the potential evolving and changing of the individuals' intellectual profiles to better understand the potential opportunities and limitations of mobilizing Gardner's theory to the educational context. Finally, other studies that promote a greater connection between psychology and sociology could be valuable for better understanding the various factors that can cause some degree of social injustice and educational inequality.

Even so, the results of this study promote an optimistic perspective regarding the educational implementation of MI, as a factor that can promote inclusion and equity of opportunities for success, based on a more student-centered approach, supportive of whole child development, and focused on deeper learning of a powerful knowledge, preparing, at the same time, students for emerging demands of today's world.

Note

1. The questionnaire survey, as well as all research, didactic, and pedagogical material used in the research (including assessment criteria, assessment reports, teaching resources, works/materials produced by students, data systematization, etc.), can be accessed from Duarte (2019).

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