Game creation to promote media and information literacy (MIL) skills in basic education teachers

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A Criação de Jogos na promoção de competências de Literacia Mediática e Informacional (MIL) em Professores do Ensino Básico

La Creación de Juegos en la promoción de competencias de Literacidad Mediática e Informacional (MIL) en Profesores de Enseñanza Básica

Informationnelle (MIL) en Enseignants d'Éducation de Base

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ABSTRACT:

Within the scope of GamiLearning (2015-2018), an action-research project with the aim of promoting the critical and participative dimensions of Media and Information Literacy (MIL) through collaborative experiences involving digital games, a workshop was conducted with Basic Education teachers in Portugal. The main goal of the workshop was to develop MIL skills, through the collaborative creation of digital games. To document this practice, a questionnaire was designed for teachers' self-evaluation of their levels of MIL, their motivation to integrate the training activity, their attitudes towards videogames and their position on media education in the formal teaching context. A group of 21 Basic Education teachers attended the face-to-face training, supported by an online collaborative platform – SAPO Campus. The quantitative results showed statistically significant increases (p < .05) in the self-perception of the teachers' media literacy skills, especially in media creation and digital identity management. The qualitative results frame a reflection on the relevance of creating digital media in students' motivation and in the promotion of media literacy competences. The barriers to the adoption of pedagogical practices which include media creation were also object of teachers' reflection.

KEYWORDS: teacher training, game-based learning, media and information literacy, digital game creation.

RESUMO:

No âmbito do GamiLearning (2015-2018), um projeto de investigação-ação com o objetivo de promover as dimensões crítica e participativa da Literacia Mediática e Informacional (MIL), através de experiências colaborativas com jogos digitais, foi desenvolvido um workshop para professores do Ensino Básico em Portugal. O workshop tinha como principal objetivo desenvolver competências em MIL, através da criação colaborativa de jogos digitais. Para documentar esta prática, foi desenvolvido um questionário para autoavaliação pelos professores dos seus níveis de literacia mediática, da sua motivação para integrarem a formação, das suas atitudes sobre os videojogos, e da sua posição sobre a educação para os media no contexto formal de ensino. Um grupo de 21 professores do Ensino Básico completou a formação presencial, suportada por uma plataforma colaborativa online – o SAPO Campus. Os resultados quantitativos demonstram aumentos estatisticamente significativos (. < .05) na auto-perceção de competências de literacia mediática dos professores, sobretudo na criação de media e gestão das identidades digitais. Os resultados qualitativos enquadram uma reflexão dos professores sobre a relevância da criação de media digitais na motivação dos estudantes e na promoção da MIL. As barreiras à adoção de práticas pedagógicas que incluem a criação de media foram também alvo da reflexão dos professores.

PALAVRAS-CHAVE: formação de professores, aprendizagem baseada em jogos, literacia mediática e informacional, criação de jogos.

RESUMEN:

En el ámbito de GamiLearning (2015-2018), un proyecto de investigación-acción con el objetivo de promocionar las dimensiones crítica y participativa de la Literacidad Mediática e Informacional (MIL) a través de experiencias colaborativas con juegos digitales,

se desarrolló un taller para profesores do Enseñanza Básica en Portugal. El objetivo primordial del taller consistía en desarrollar competencias en MIL, a través de la creación colaborativa de juegos digitales. Para documentar esta práctica, se diseñó un cuestionario para autoevaluación de los profesores, de sus niveles de literacidad mediática, de su motivación para integrar la formación, de sus actitudes hacia los videojuegos, y de su posición respecto la educación mediática en el contexto formal de enseñanza. Un grupo de 21 profesores de Enseñanza Básica participaron en la formación presencial, respaldada por una plataforma colaborativa online – SAPO Campus. Los resultados cuantitativos presentan aumentos estadísticamente significativos (. < ;.05) en la autopercepción de competencias de literacidad mediática de los profesores, sobre todo en creación de medios y gestión de las identidades digitales. Los resultados cualitativos plantean una reflexión sobre la relevancia de la creación de medios digitales en la motivación de los estudiantes y en la promoción de literacidad mediática. Las barreras a la adopción de estrategias pedagógicas que incluyan la creación de medios fueron objeto de la reflexión de los profesores.

Palabras clave: formación de profesores, aprendizaje basada en juegos, literacidad mediática e informacional, creación de juegos digitales.

Résumé:

: Dans le cadre du GamiLearning (2015-2018), un projet d'investigation-action visant à promouvoir les dimensions critique et participative de la Littératie Médiatique et Informationnelle (MIL), à travers d'expériences collaboratives avec des jeux digitaux, un workshop a été développé pour des enseignants d'Éducation de Base au Portugal. Ce workshop avait pour but premier de développer des compétences en LMI, à travers la création collaborative de jeux digitaux. Pour documenter cette pratique, un questionnaire d'auto-évaluation pour les enseignants a été développé concernant les niveaux de littératie médiatique, la motivation pour rejoindre la formation, les attitudes envers les jeux vidéo et la position sur l'éducation aux médias dans le contexte formel de l'enseignement. Un ensemble de 21 enseignants d'Éducation de Base a complété la formation présentiel, supportée par une plateforme collaborative online – SAPO Campus. Les résultats quantitatifs démontrent des augmentations statistiquement significatives (. < .05) dans l'auto-perception de compétences de littératie médiatique des enseignants, surtout dans la création de média et gestion d'identités digitales. Les résultats qualitatifs encadrent une réflexion des enseignants sur la pertinence de la création de média digitaux dans la motivation des élèves et dans la promotion de la littératie médiatique. Les barrières à l'adoption de pratiques pédagogiques incluant le développement de média ont fait l'objet de réflexion des enseignants.

Mots clés: formation d'enseignants, apprentissage basé sur le jeu, littératie médiatique et informationnelle, création de jeux digitaux.

Introduction

The development of teachers beyond their initial training can serve a number of objectives including to enable schools to develop and apply new strategies concerning the curriculum and other aspects of the teaching practice (OECD, 2009, p.49), where the ability to prepare students to live in a highly mediated environment can be framed.

GamiLearning (2015-2018) was an action-research project generally aiming to develop the critical and participatory dimensions of Media and Information Literacy (MIL) in young people, through collaborative learning experiences with digital games creation. The project specifically intends to: a) create conditions that allow the creation of digital games in the formal schooling contexts; b) promote technical and sociocultural skills in the field of digital identiti(es) management, that allow the self-management of online identities; c) promote the collaboration during the learning process, and d) assess the effectiveness of game creation in the development of MIL skills. In the GamiLearning intervention in Portugal, students and school teachers of Basic Education have received training in MIL, through Game-Based Learning pedagogies and specifically digital games creation. In the present paper, we discuss the results of teachers' intervention.

Media and Information Literacy and Game-Based Learning

Considering the contemporary context, characterized by digital media convergence scenario and highly complex media and information ecology, the promotion and enhancement of media literacy gains a crucial and central role, either with child or adult populations (Livingstone, Bulguer, & Zaborowski, 2013). Even

if we assume a certain familiarity of students with the internet and other technologies, it is not possible to assure their abilities to access, analyze and evaluate the information or media available online (Hobbs, 2008). Frau-Meigs (2014) states that core MIL skills include Operational skills (including coding and computing), Editorial skills (including multimedia writing-reading-producing and mixing) and Organisational skills (including navigating, sorting, filtering, evaluating) that are central to media education in a digital age. Moreover, MIL is not an individual competence but sociocultural (Livingstone, Wijnen, Papaioannou, Costa, & Grandio, 2013) and includes skills on Digital Identity Management (Costa, Sousa, Rogado & Henriques, 2017). The adopted model in GamiLearning integrates these components and is better explained by a schematic representation (Figure 1).

FIGURE 1
MIL conceptual model (Costa, Sousa, & Tyner, 2019, p. 85)

Game-Based Learning (GBL) has been discussed as a valid and effective pedagogical strategy to develop a wide range of skills and competences (Sousa & Costa, 2018). Games have been recognised as tools that allow the learner to actively construct their own knowledge whilst they are able to control their learning in a safe learning environment (Romero, Usart, & Ott, 2015). Regarding specifically the usage of GBL strategies to promote MIL, there is not an extensive body of research to support their implementation. Notwithstanding, there is data on the efficacy of video game production as an effective pedagogical approach to the promotion of MIL in formal education contexts (Costa, Tyner, Henriques, & Sousa, 2018).

TRAINING AND PROFESSIONAL DEVELOPMENT PROGRAMME FOR TEACHERS

Nowadays, teachers' training and professional development is conceived as a higher priority and a central mechanism in the field of Education. The improvement of teachers' knowledge and their teaching skills and practices intends to meet high educational standards and prepare students, not only in the "regular" school subjects, but also as citizens with the required skills to critically analyse and make sustained and responsible decisions in their daily lives (Boudersa, 2016). Moreover, successful teachers' training and professional development programmes promote the involvement of teachers in learning activities that are similar to ones they will held with their students, and encourage the development of teachers' learning communities, to share their expertise, as systematically as possible (OECD, 2009, p.49).

As conceived by UNESCO, the promotion of MIL ultimately frames our capacity to enjoy fundamental freedoms and our ability for self-determination (Wilson, Grizzle, Tuazon, Akyempong, & Cheung, 2011, p. 11). This promotion is crucially relevant in children and youth lives and can only be supported "by a civic education movement that incorporates teachers as principal agents of change" (Wilson et al., 2011, p. 11). UNESCO's Media and Information Literacy Curriculum for Teachers has six different dimensions: Policy and Vision; Curriculum and Assessment; Pedagogy; Media and Information; Organization and Administration; and Teacher Professional Development. Each dimension is also composed by three different

key curriculum areas: Knowledge of media and information for democratic discourse; Evaluation of media and information; and Production and use of media and information. These key areas are not independent, and have a progressive character, for example, the integration of user-generated content for teaching and learning, progressively emerges from the integration of media in the classroom discourse (Wilson, et al., 2011, p. 23).

When focusing specifically on media and information production and use, it is considered that the ability to select, adapt and/or develop MIL materials and tools for a given set of educational objectives and student learning needs, should be skills that teachers acquire. This production of content by teachers frames a student-centred pedagogy that encourages students' reflexive thinking and empowers teachers to become leaders in promoting MIL within the school curriculum (Wilson, et al., 2011, p. 28).

Teachers' beliefs and motivations for the actual usage of media and technology in the classroom are not linearly explained and may vary considering their professional role (as language arts, social science or ICT teachers). In addition, it is also documented that the access to media production resources, like video cameras, voice recorders, smartphones or media production tools, not necessarily represents the creation of media content with pedagogical purposes and its use in the classroom (Hobbs & Tuzel, 2015).

Regarding the usage of GBL strategies, teachers' attitudes support their implementation in the classroom context (Sousa, Henriques, & Costa, 2017; Ucus, 2015). Teachers consider that games represent a feasible and consistent pedagogical strategy, namely in actively engage students in the learning process, constructing a link between curriculum and social life (Ucus, 2015) and enabling the promotion of a range of skills and literacies (Sousa, Henriques, & Costa, 2017).

The e-Media Education Lab, an European project aiming to deliver and experiment training resources for teachers' professional development in an online platform, which included a sample of Portuguese teachers, gathered data about the main challenges of training in-service teachers about media and digital literacy (Ranieri, Bruni, & Orban de Xivry, 2017). According to the e-Media Education Lab results, the teachers' workload and difficulties to actively engage in a training programme associated with the lack of institutional support by schools are the main issues and challenges to overcome. Moreover, teachers also expect and demand constant feedback from the trainers, when an online training platform exists (Ranieri, Bruni, & Orban de Xivry, 2017).

The present paper aims to describe the GamiLearning pedagogical practice, through the detailed presentation of the implemented methodology, and the investigation of the following research questions (RQ):

RQ1: What are the teachers' main motivation to enroll in the training programme?

RQ2: What are the teachers' beliefs regarding the relationship between videogames and learning?

RQ3: What are the teachers' beliefs about the inclusion of media education in formal schooling?

RQ4: Can a game creation training programme promote teachers' skills development in MIL?

METHOD

The Training Programme

The 36 hours training programme was designed taking in account not only the Portuguese's Ministry of Education Media Education Guidance (Referencial de Educação para os Media; Pereira, et al., 2014) bat also to cover the MIL competences presented in Figure 1. The main goal of the different sessions was to empower teachers to create a Scratch game in group work for their students, framed in the principles of game-based learning to promote one of the 12 topics from the above mentioned Media Education Guidance (Communicating and Informing; Understanding Today's World; Types of Media; ICT and Screens; Digital Networks; Entertainment and Shows; Advertising and Brands; Production and Industry/Professionals and Enterprises; Audiences and Consumption; Freedom and Ethics, Rights and Duties; The Media as Social

Construction; We and the Media). The training programme was certified by the national council for continuous teacher training (Conselho Científico-Pedagógico da Formação Contínua - CCPFC). The time distribution by subjects is shown in Table 1.

CURRICULA TOPICS	NO. OF TRAINING HOURS
Media Education	4
Learning Paradigms	3
Game-Based Learning Strategies	8
Gamification	4
Game Design and Development	12
Critical reflection about the Training process	5

TABLE 1
Organization of the program's curricula and topics
Authors' elaboratio

It is important to highlight that the training program required a considerable amount of work outside the presential training session. All the curricula were implemented through collaborative strategies, such as a collaborative online platform to submit and discuss the projects (during the development process) and group work.

The option for game creation as a learning strategy is based on the premise that through media creation by students, teachers frame a student centred pedagogy, able to promote reflexive thinking and empower them in the acquisition of MIL skills and particularly critical analysis of media, as mentioned in UNESCO's Media and Information Literacy Curriculum for Teachers (Grizzle, Tuazon, Akyempong, & Cheung, 2011).

Participants

The training program was advertised in the GamiLearning website, on social media, mainly SAPO Campus, Facebook, Twitter and Linkedin, and through the project's partner schools. In two weeks, 56 online applications were received. The applications were then screened following the order of application (earlier applications had priority) and aiming as much as possible a balance in the subjects taught by the teachers. Since MIL is considered by the Portuguese educational system as a "crosscutting and trans-disciplinary topic of education for citizenship" (Pereira, Pinto, Madureira, Pombo, & Guedes, 2014, p.7) the goal was to have teachers from several disciplinary areas.

After the screening process, the initial training group was composed of 29 teachers. In the SAPO Campus platform, 25 teachers enrolled the Gami Training Community. The training program was completed by 21 teachers (72,4%), the same group that completed the survey filling for this study. Therefore, the convenience sample of this study is composed of 21 teachers, aged between 34 and 59 years old (M = 42,86; SD = 5,304). Most of the teachers have completed a bachelor's degree (N = 15; 71,4%), and six (28,6%) have completed a Master's Degree. When enrolled in this training program, most of the participants were teaching in public schools (N = 17; 81,0%), while the others were teaching in private schools (N = 4; 19,0%). The subjects/ disciplines taught by the participants are detailed in Table 2. It is word to notice that in first cycle Basic Education one teacher is in charge of a class during four years of formal schooling, teaching all the subjects of the mandatory curricula.

SCHOOL SUBJECT	N (%)	%
Portuguese	7 (33,3%)	90.4
1st Cycle Basic Education (BE)	4 (19,0%)	71.4
Mathematics (2nd/3rd Cycle) BE	4 (19,0%)	61.9
ICT (2nd/3rd Cycle) BE	2 (9,5%)	52.3
English (2nd/3rd Cycle)	2 (9,5%)	42.8
Preschool	1 (4,8%)	33.3
French (3rd Cycle) BE	1 (4,8%)	

TABLE 2
School subjects/Disciplines taught by the participants (N = 21)
Authors' elaboration

Procedure

The research design of this study was based on a pre and post data gathering method. The teachers enrolled in the training course were requested to fill the surveys before starting the training, and after finishing the training, through an online form. Informed consent from the trainees was requested for this study. Correspondence between pre and post data from each participant was ensured by the confidential attribution of a code.

Data Collection Instruments

The baseline (pre-training) survey was composed by three parts: demographic data collection; motivations and expectations (qualitative, open-ended questions) and MIL assessment (quantitative, Likert scale questions). The demographic data gathered were age, qualifications (including degree and scientific area), curricular unit and type of school (public or private).

The section on motivations and expectations was composed by the following questions:

- What was your main reason to enroll in this training program?

- Do you think there is a relationship between videogames and learning? If yes, please describe it.

- In your opinion, how can media education be integrated in formal education contexts?

The MIL assessment questionnaire was composed by 19 items. Answers were provided through a five-point Likert scale, ranging from one (low level of knowledge [I do not know how to do / I never did]) and five (high level of knowledge [I already have done it and I have experience in doing it]). The items were extracted and adapted from a questionnaire created by Costa, Tyner, Henriques, & Sousa (2018) to assess MIL in children. The items from the questionnaire for students of 2nd and 3rd cycles of Basic Education, were selected considering the pedagogical objectives of the training and the final questionnaire can be found in Table 3.

The endline (post training) survey was composed of two sections: motivations and expectations (qualitative, open-ended questions) and MIL assessment (with the exact same questions and format as in the baseline assessment).

In the motivations and expectations section the following questions were made:

- What do you think is the main contribution of this training to your professional activity?

- Please list the main positive aspects of this training programme.

- Please list the main negative aspects of this training programme.

It is important to highlight that the motivations and expectations' questions were also made to complete an inner process of training evaluation, and not only to match the above defined RQs.

Data Analysis

Qualitative data was analyzed through NVIVO software (version 11), via content analysis methodology. MIL assessment data was analyzed with IBM Statistical Package for the Social Sciences (version 22). Considering the non-normal distribution of the answers, Wilcoxon signed rank test was used to compare differences between pre and post data, as a non-parametric equivalent of student's t test.

Results

Content Analysis

As explained above, the motivation to enroll in the training programme, the beliefs about the relationship between videogames and learning, and the beliefs about the inclusion of media education in formal schooling were assessed in the baseline survey. Regarding the teachers' motivation to enroll in the training programme, three groups of main reasons were identified, namely: reasons related with the training curricula; reasons related with professional development; and academic reasons, like the intention of enrolling in a PhD programme in the field or to do research work. Moreover, another type of reason was mentioned several times by the sample: the fact that this training source is free of any charge. Specific reasons, inside these main ideas also emerged. Considering the ones related with the course curricula and content, the desire to learn how to use programming tools, to use videogames as a pedagogical strategy and to engage students with innovative methods were the most referred. The reasons related with professional development were mainly the desire of updating knowledge and to progress in the teaching career. None of the identified categories was mutually exclusive, meaning that some teachers refer more than one of them.

Considering the teachers' beliefs about the relationship between videogames and learning, the majority referred positive outcomes, mainly related with learning and motivation, for example: "Videogames or the usage of game mechanics can increase students' engagement, motivation, and therefore learning". Only one participant considered this relationship difficult and two considered it challenging, not necessarily with a negative connotation. To illustrate this, results were systematized in a word cloud, represented in Figure 2.

FIGURE 2
Word Cloud of teachers' beliefs about videogames and learning

Regarding the inclusion of media education in formal schooling contexts, teachers' answers agree on the relevance of the inclusion of media education in formal schooling. Nevertheless, teachers have different

beliefs about the process of inclusion media education. Most of the participants considered that media education must be mandatory and transversal in the curricula. Otherwise, three participants considered that media education should be a supplement to the mandatory curricula to be promoted in ateliers or workshops. A relevant aspect is that most of the teachers believe that the usage of media as pedagogical tool, is the best way to promote MIL, in a more engaging and effective way. Moreover, some participants considered that the inclusion of media education in the formal schooling context would require deep changes in the curricular goals and content, such as more flexibilization and possibility to adjust the curricula to every school or group of students.

In the endline survey, the participant teachers assessed the training programme. In general, the training programme was considered an interesting way to acquire new pedagogical strategies to adapt to each teacher specific subject and, mainly, to develop more engaging activities. Although, the training program was also considered very demanding and difficult taking into account a teacher's typical workload and schedules.

MIL skills assessment

The outcomes of this training programme, regarding MIL skills, were assessed with a set of quantitative questions. The gathered data shown statistically significant differences between the baseline and endline questions in 10 out of 19 items. The most significant differences were found in the most explored activities during the training, such as: Create an avatar ($p = .004$); Create levels in a videogame ($p = .005$); Share my creative work online ($p = .006$); Assume different roles when playing videogames ($p = .007$); Use a safe process to store my passwords ($p = .010$); Use programming software or tools ($p = .017$); Create an app ($p = .024$); Manage an online profile to share my interests, ideas, photos or videos ($p = .032$); Think carefully about the way I show who I am online ($p = .034$); Using computer programs to create my work ($p = .047$). Detailed results of the baseline and endline surveys are presented in Table 3.

Item no.	Item	M pre (SD)	M post (SD)	p
1	Create an avatar	3.00 (1.452)	3.92 (1.071)	.004
2	Find inspiration in others work, to create my own work	3.73 (0.805)	4.14 (1.027)	.088
3	Think carefully about the way I show who I am online	4.00 (1.154)	4.35 (0.841)	.034
4	Use a safe process to store my passwords	3.42 (1.169)	4.28 (0.913)	.010
5	Assume different roles when playing videogames	2.42 (1.216)	3.78 (1.121)	.007
6	Build a website	3.00 (1.632)	3.28 (1.589)	.071
7	Share my creative work online	3.26 (1.240)	4.00 (1.037)	.006
8	Create an app	1.63 (0.955)	2.50 (1.286)	.024
9	Manage an online profile to share my interests, ideas, photos or videos.	3.26 (1.240)	4.07 (0.997)	.032
10	Use charts, schemes, tables and images to explain my ideas	3.73 (1.097)	4.00 (1.24)	.272
11	Understand the websites' terms and conditions before accepting it	3.78 (0.976)	4.07 (0.991)	.132
12	Use digital tools to present my work or projects	3.84 (1.067)	4.14 (0.949)	.084
13	Use programming software or tools	2.42 (1.464)	3.57 (1.504)	.017
14	Create levels in a videogame	1.84 (1.167)	3.42 (1.398)	.005
15	Protect my computer and mobile phone with strong and safe passwords	3.89 (0.875)	4.35 (0.744)	.058
16	Use programs to create, edit and share photos or videos	3.57 (1.169)	4.07 (0.916)	.161
17	Protect my data when using public computers, making log out and not storing my passwords	4.21 (0.976)	4.28 (1.138)	.755
18	Create a blog	3.31 (1.416)	3.92 (1.384)	.062
19	Using computer programs to create my work	3.57 (1.169)	4.35 (0.744)	.047

TABLE 3
MIL Questions baseline and endline results (N = 21)
Authors' elaboration

DISCUSSION

Regarding RQ1, the training program curricula as motivation factor seems to highlight, to some extent, the lack of initiatives in the field of game-based learning and MIL for teachers. Moreover, it is not possible to ignore that teachers must progress in their careers, which is legally connected with the obtention of training credits. Besides the fact that this training allows teachers to obtain some of these credits, it was also mentioned the fact of being free of charge/tuition as a motivational factor. This result seems to highlight the relevance of Ministry of Education offer for free continuous training in this field, which probably would attract more and more teachers to continuous training in general and in MIL. As stated above, this course had a total of 56 applications in only two weeks.

Like in previous studies (Sousa, Henriques, & Costa, 2017; Ucus, 2015), most of the teachers recognize the pedagogical potential of videogames (RQ2). Videogames are recognized by teachers as having "a specific way" to engage students and, if it could be applied to their learning, videogames have great pedagogical value. This result reinforces an important condition in the process of including videogames in formal schooling contexts, the teachers' supportive attitudes.

Considering RQ3, the trainees mainly considered the inclusion of media education in formal schooling context as very relevant, mentioning that it should be mandatory and framed as a transversal subject. It is

interesting to note that teachers' views are mainly aligned with UNESCO's Media and Information Literacy Curriculum for Teachers (Wilson et al., 2011) as well as with the Portuguese's Media Education Guidance (Referencial de Educação para os Media; Pereira, et al., 2014). However, in teachers own words, to include Media education in the curricula, demands changes in the Portuguese educational system.

Taking into account our results, game creation can be considered as an effective strategy to promote teachers' MIL skills (RQ4), particularly operational and editorial skills, and empowers them to apply similar strategies with their students.

It is also relevant to highlight the excessive workload as one of the main negative aspects of the teachers' participation in the training program, a result that matches the conclusions from an European project with teachers, as mentioned by Ranieri, Bruni, & Orban de Xivry (2017).

Conclusions and Future Work

By documenting this practice, it is possible to conclude that game-based learning and game creation were feasible and effective strategies to both promote teachers' MIL skills and empower them as agents of change in formal educational settings. It is also important to highlight the teachers' favorable beliefs regarding videogames pedagogical value, as well as about the need for MIL promotion in curricula as a transversal competence in all curricular units in schools. Still, teachers' workload is as a barrier for enrolling them in challenging training programs and difficulties to implement such strategies in the Portuguese educational system were also highlighted.

Future studies should include a larger sample to obtain more generalizable results, as a way to possibly support decisions in the field of Education.

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