Educação:

Saberes em

Movimento,

Saberes que

• Movimentam

Teresa Margarida Loureiro Cardoso (organizadora)

II



Educação:

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Teresa Margarida Loureiro Cardoso

Ι

(organizadora)

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APRESENTAÇÃO

O terceiro volume da Educação: Saberes em Movimento, Saberes que Movimentam, publicado pela Editora Artemis, convoca a inovação enquanto denominador comum. Uma inovação em torno de diversos cenários digitais, que hoje, mais do que nunca, populam os nossos quotidianos, em diferentes níveis de ensino. Mas também uma inovação em torno de competências de literacia ditas básicas, tradicionais, como a leitura e a escrita, todas inerentes ao direito universal à educação e à aprendizagem ao longo da vida, desígnios que a UNESCO nos estimula a concretizar, dia após dia.

Celebrar o dia internacional da educação, assinalado precisamente há um mês, é ir ao encontro desta inovação – curricular, pedagógica, tecnológica – que permita contribuir para atender às necessidades dos nossos alunos, estudantes, professores, formandos, enfim, numa palavra, dos educadores em todo o mundo. Uma inovação contextualizada, holística e transformadora, que permita contribuir para assegurar, aos indivíduos e aos coletivos, o desempenho consciente de um papel ativo, crítico e interventivo na sociedade.

Nos Saberes em Movimento, Saberes que Movimentam aqui reunidos, há ainda espaço e tempo para recordar que a *Educação* mudou significativamente, em alguns pontos do globo, mais do que noutros, durante a COVID-19. Esta pandemia, a par de outras situações atuais de grande adversidade, continua a provocar mudanças com impacte no nosso presente e futuro. Importa, pois, (re)imaginar direções positivas para a educação¹; importa, portanto, (re)imaginar os nossos futuros em conjunto². E que os Saberes plasmados nestes capítulos possam ser o ponto de partida para (re)iniciar esta conversa, tão essencial quanto vital³!

Teresa Cardoso

¹cf. https://portal.uab.pt/investigacao/projetos/rapide-reimagining-a-positive-direction-for-education/ Acesso em: 25 fev. 2023.

² cf. https://unesdoc.unesco.org/ark:/48223/pf0000381115 Acesso em: 25 fev. 2023.

³ cf. https://www.guninetwork.org/publication/unesco-futures-education-report-reimagining-our-futures-togethernew-social-contract Acesso em: 25 fev. 2023.

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DOING MULTICULTURAL EDUCATION IN TIMES OF TROUBLE: A CASE OF PBL IN BILINGUAL ARAB-JEWISH SCHOOL IN ISRAEL

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Raz Shpeizer

Kaye Academic College of Education School of Advanced Studies and the Department of Post-Graduate Teacher Education Beer-Sheva, Israel https://orcid.org/0000-0002-1003-2327

Orit Freiberg

Kaye Academic College of Education Department of Teaching Internship Beer-Sheva, Israel https://www.researchgate.net/profile/Orit-Freiberg

ABSTRACT: Israeli society, like manv contemporary societies, consists of various cultures and sub-cultures. This diversity finds expression in Israel's education system, albeit through segregation, since the system is divided into culturally-based educational sectors, most prominently among Jews and Arabs. This segregation strengthens mutual cultural alienation rather than intercultural dialogue. Against this tendency, a few bilingual-bicultural Arab-Jewish schools have been established in Israel, one of which is situated in Beer-Sheva, a city in the southern region of Israel, whose demographic consists predominantly of Bedouins-Arabs and Jews. The bilingual school in Beer-Sheva was built on multicultural and intercultural principles. The school's underlying pedagogical assumption is that there should be a connection between the school's educational agenda and the forms of teaching that it deploys. Thus, in order to advance social transformation in the spirit of multiculturalism and interculturalism. a pedagogical approach that fosters students' activism, initiative, critical thinking and collaborative abilities needs to be adopted. Such an approach can be found in PBL (project-based learning), a proactive, studentcentered. group-oriented and practiceoriented teaching method. Therefore, in this text, we explore a case study of a 4-months PBL initiative that took place in Beer-Sheva's bilingual Arab-Jewish school. Through a rich description, we expose the different layers of the case and provide a holistic picture of it, arguing that the study's findings affirm the positive connection between PBL and a multicultural agenda. Based on these findings, we offer some guidelines for the implementation of PBL in the context of multicultural and intercultural education.

KEYWORDS: Multiculturalism. Education. Bilingual schools. Project-based learning (PBL). Israel.

1 PROLOG

Our story begins in 2006 in the city of Beer-Sheva, when a group of Jewish and Arab

parents, who knew each other socially, got together and decided to create a Jewish-Arab community and local bilingual education system. In order to understand the uniqueness of this step, we need to give some context and information about Israel.

2 THE CONTEXT

Israeli society, like many contemporary societies, is a multicultural and multiethnic society. The Arab-Israelis, or *Palestinian citizens of Israel*, as they preferred to be called (Mandel, 2018; Mossawa Center, 2016), are, by far, the largest minority group in Israel. Their population is estimated at 1.9 million, which is about 21 percent of the overall Israeli population, approximately 74 percent of which are Jewish-Israelis (Israel Central Bureau of Statistics, 2021). The Palestinian population within Israel is comprised of either people who lived in the region prior to 1948, or their descendants. 1948 was the year in which the Israeli state was established, after a prolonged armed conflict between the Jews and the Arabs who occupied the region (the latter, at some stage, were joined by the armies of the surrounding Arab states). During this conflict, an estimated 700,000 Palestinians fled or were forced into exile, and hundreds of Palestinian villages were deserted or destroyed (Morris, 2003). It is no wonder, then, that while the Jews refer to the 1948 war as the *War of Independence*, Palestinian citizens of Israel, and the Arab world as a whole, call it *al-Nakba* (the catastrophe. See Mori, 2009). This dichotomy expresses in a nutshell the ongoing tension and conflict between the two ethnic groups.

The vast majority of Palestinian citizens in Israel live in separate communities, and this segregation usually exists even in the ethnically mixed cities of Israel. It also exists in the Israeli education system which is divided into culturally-based educational sectors. Thus, the Arab education system and the Jewish education system in Israel are mostly separated, a situation which duplicates and reinforces the tension and alienation between the two groups rather than encouraging intercultural dialogue. Against this tendency, several bilingual-multicultural Arab-Jewish schools have been established in the last few decades (as for today, there are nine of them). One of these schools is the bilingual school in Beer-Sheva, a city in south Israel, a region with a relatively large population of Arabs (mainly Bedouins) alongside the Jewish population.

3 THE CASE STUDY'S ACTUAL AND CONCEPTUAL ARENA

The bilingual school in Beer-Sheva is an elementary school, which is part of a larger local bilingual educational structure, which offers also private daycare and prekindergarten. From the outset, this educational apparatus was conceived by its founders in terms of community – the *Hagar* community – which includes the families of the students and encompasses shared activities both inside and outside the framework of the school. As of today, in the bilingual school of Hagar study, in mixed classrooms, 260 children, with approximately equal numbers of Arab and Jewish students and teachers.

Hagar's community and school were built on multicultural and intercultural principles. As many scholars (e.g., Rață, 2013) have noted, there is no one accepted definition of multicultural education, and since a serious exploration of the concept is not possible here, we would like to focus on the school's explicit and implicit agenda in order to understand its attitude toward multiculturalism. An analysis of this agenda (which included analysis of school's curriculum, official documents, and internet site) reveals 3 levels of multiculturalism:

- 1. The values level. On this level, the school adheres to principles of social justice, social activism, equality, equity and pluralism.
- 2. The vision level. On this level, the school aspires its students to become self-aware autonomous agents, who are committed to respecting not only their own but other peoples' right to live as autonomous people in a democratic society. At the same time, the school explicitly aims to the transformation of schooling and of society as a whole. "To build an egalitarian civil society in the Negev and in Israel as a whole through our bilingual, integrated schools..." (Hagar: Jewish Arab Education for Equality, vision section, n.d.).
- 3. The pedagogical level. The school's underlying pedagogical assumption is that there should be a connection between the school's overall agenda, that is, between its vision and values, and the forms of teaching that it employs. In other words, there should be a match between the content and the form of what is taught and learned in order to advance both individual growth and social transformation in the spirit of multiculturalism and interculturalism. Regarding content, the school: Acknowledges and gives voice to the different historical narratives of the two cultures; combines the core studies with multicultural themes; and incorporates the study of the three main monotheistic religions Judaism, Islam and Christianity and their cultures into the curriculum. Regarding form, the school embraces a progressive learning approach combined with bilingual methods. Hence, the students are active and engaged participants in the learning processes, and lessons are taught by Arab and Jewish co-teachers in both languages.

One of the teaching-learning methods used in the school is PBL (project-based learning), which, according to one definition.

Engages students in learning knowledge and skills through an extended inquiry process structured around complex, authentic questions and carefully designed products and tasks (Markham, Larmer & Ravitz, 2003, p. 4).

By being a proactive, student-centered, group-oriented and practice-oriented teaching method, PBL was thought by the school's educational leadership to provide a suitable framework for advancing the school's educational and ideological goals. Thus, it was gradually incorporated into the curriculum, although none of the projects which were conducted was on the scale of the project which is the focus of the present study.

4 THE CASE STUDY DESCRIPTION

There were 23 students and two homeroom teachers – one Arab and one Jewish – in the fourth-grade class of the bilingual school in Beer-Sheva. The PBL took place over 4 months, as part of the students' humanities studies. Its title was: "My, your and our living space." The underlying research question was: "How can we live together in a multicultural neighborhood?" The students started by observing and characterizing their own homes and neighborhoods. They presented their findings in class, acknowledging the wide variety of lived environments. They further learned about the geographic area in which they live – the Negev – and its uniqueness. They constructed some understanding of the principles of multiculturism through conceptualization.

Based on their research, as well as the knowledge and insights they gathered, the students decided that the class project would be to plan a special neighborhood, which they decided to name "Living Together." They had to combine their understanding of the notion of "living space" with the variety of needs of a multicultural society, in order to plan the neighborhood. The students were divided into a number of small groups, and each group had to plan, design and build an architectural model of a common area, like a park, or public institution such as a school, a community center, a mall, a house of worship (for each religion), and so forth. In the final stage of the project, all the models were combined, and the houses of the neighborhood were added to them, so an architectural model of the complete neighborhood was created.

Few teachers and experts were involved in the PBL process:

- The homeroom teachers led and guided the project and taught the humanities topics.
- The math teacher taught the students to calculate areas and to use an architectural plan.

- The art teacher was responsible for helping build the models with the students.
- The pedagogical counselor and a PBL advisor guided the teachers in the process.
- A professional architect gave a lecture about the fundamentals of architecture.

In the closing event of the project, the students presented and explained their work to an audience comprised of their families and educational experts. A few days later, the mayor of Beer-Sheva and the city's education minister arrived at the school, met the students and their teachers, and learned about the project.

5 STUDY RATIONALE, OBJECTIVES AND QUESTIONS

Although, as mentioned, there is no one accepted definition of multicultural education, there is a considerable consensus among educators and researchers regarding some main aspects of it. Thus, for example, many would agree that multicultural education should promote equality and equity, "Tolerance, respect, understanding, awareness and acceptance of self and others in the diversity of their cultures" (Arslan, 2015, p. 16). There is also wide agreement that multicultural curriculum should include various cultural perspectives, and that the way of teaching should generally be student-centered, sensitive to students' different cultural backgrounds, and favor collaboration (Anderson et al., 2000; Norley, 2014). However, the discussions about the "Art of multicultural curriculum delivery" (Thompson, 2014, p. 11) tend to be abstract, and there is not much information or research regarding specific methods for teaching and educating for multiculturalism (Sleeter & Grant, 1987; Thompson, 2014).

Given this situation, the project that was carried out at the bilingual school in Beer-Sheva presented us with an opportunity to study the connections between PBL, which is a well-established teaching method, and the actual life and goals of a multicultural educational institution. Accordingly, two main research questions were formulated:

- How do students and education staff in a bilingual multicultural Arab-Jewish school experience the process of PBL?
- How do students and education staff in a bilingual multicultural Arab-Jewish school perceive the connections between PBL and the school's multicultural agenda?

6 METHODOLOGY

The main research method we employed was participative case study, which is a special genre of case study in which the researchers, who observe and study the case,

are also participants (Baskerville, 1997; see also, Reilly, 2010). Using the participative case study method allowed us to maintain a close connection with the process and the participants, and, at the same time, provide consulting when needed. Furthermore, it allowed us to put more emphasis on the participants' voice, and to advance their knowledge, skills and sense of self-efficacy, all of which are goals of PBL. In order to keep the research rigorous and fair-minded, we integrated the action research iterative cycle (see, e.g., Carr and Kemmis, 1986) into the process.

The research tools we used were semi-structured in-depth interviews with both the educational staff and students, during and after the project; participant observation; photographs; and a research log. The data analysis applied was a free version of the constant comparative method (Strauss & Corbin, 1998), wherein categories are extracted, compared and re-shaped from the beginning until the end of the field work.

7 FINDINGS

We will focus on three main themes that the data analysis revealed and are relevant to the research questions:

- Guidance, support and preparation
- A sense of the real
- Bonding through collaborative doing.

7.1 GUIDANCE, SUPPORT AND PREPARATION

The willingness to listen [...], I had someone to talk with. There is somebody who hears me [...]. And also the professional tools we have received. These are things that helped us a lot. (Miriam, teacher)

All of the educational staff emphasized the importance and need of close guidance, attentive support and thorough preparation and planning. For the teachers, the two major needs expressed were guidance in the technique and process of PBL and emotional support. In accordance with some teachers' observations, it seems that the need for the latter is the consequence of the combination of intense work, uncertain conditions, and the close interactions between the teachers themselves, and between them and the students:

- Sometimes there was some tension regarding the teacher's co-operation. (Rada, teacher)

- The work on the project was very intense and time consuming. (Miriam, teacher)

Both teachers and managing-supportive staff (i.e., the schools' pedagogical counsellor, the PBL advisor and the school principal) agreed on the importance of

preparation. "Planning, planning, planning," said another teacher, Rina, "PBL requires very good planning." However, looking back, the managing-supportive staff felt that there was also a need for more theoretical preparation regarding the foundations of multiculturalism. "It was the first big PBL in our school," noted the principal, "So naturally we have focused more on the ways of doing it. In future projects, we will more explicitly connect the multicultural principles and foundations to the actual project, though, of course, these principles and foundations are present in all our educational activity."

7.2 A SENSE OF THE REAL

"We really learned. It wasn't just opening a book" (Munar, student).

The observations and interviews reveal that all project participants – teachers and students alike – experienced the process not merely as a theoretical exercise, but as an activity directly connected to their real everyday life. This sense of the real was expressed: First, by the level of engagement and emotional involvement:

"It was very interesting and important to me, as a teacher [...]. I was really happy when we successfully completed the project, and the children were so proud of their work. (Hana, teacher)

Second, by participants' reference to a meaningful and memorable experience: "This is something I'll always remember"; "This is something I don't forget. I spoke with all my friends about it," and third, by participants (especially the students) explicitly connecting their learning and the project's subject matter to their lives:

We have learned that in real life you have to work hard to get results [...], and we believed that this project can really make a change, help stop racism and violence, help stop some of the bad things in the world. (Amina, student)

7.3 BONDING THROUGH COLLABORATIVE DOING

The connection to real life was first and foremost facilitated by the action-oriented character of PBL, which encourages learning by doing. All of the study's participants repeatedly mentioned the importance and impact of the element of doing:

My strongest experience was that of learning by doing. You really learn through active doing (Hana, teacher). The doing was real fun, and we also learned a lot from it (Daniel, student).

Most of the project work was done in groups. The teachers worked, at least part of the time (e.g., planning, coordination), as a group, and the students worked mainly in small (3-4 students) – ethnically-mixed – groups, and sometimes as a whole-class group. As already hinted at above, this collaborative doing occasionally yielded tensions and arguments. However, it is important to note that most of the students did not view these disagreements in a negative light, but rather as part of a natural process of collaborative work, which eventually leads to a better understanding of the others, and better connection with them.

- Maybe there were...well, not fights but, for example, we didn't agree about the design [...]. There were conflicts and disagreements, but it has also taught me how to agree. (Leah, student)

- The fact that you work with other people, and it is not only a Jewish neighborhood, but a neighborhood of different religions, different cultures, it made everything to connect. (Suha, student)

- It was difficult sometimes, but it also was fun, and in the end it has unified the class. Even after the project finished, we continued to share things with each other. (Amir, Student)

8 DISCUSSION

The need to provide teachers with guidance regarding the foundations and implementation of both PBL and multiculturalism is well acknowledged in the literature (see, e.g., Arslan, 2013; Shpeizer, 2019; Thompson, 2014). The same is true about the need for careful planning of any PBL project (Markham, Larmer and Ravitz, 2003. See also, Chandler, 2015; D'Ambra, 2014). What is less obvious and yet, according to our findings, equally important is the need for emotional support for teachers engaging in a multicultural PBL. It seems that the combination of a demanding teaching method, cooperative work, and a multicultural framework and content, creates an intense experience for teachers. Thus, much like students, they need attentive and empathic support throughout the process so that they can share and unpack their feelings.

Multicultural education aims to transform individuals and society (Gorski, 2010). Hence it is a praxis, rooted in and oriented toward real life. The fact that the study's participants experienced and perceived the project as a real-life process indicates that the PBL method, with its emphasis on authentic and active learning and actual product, suits this goal particularly well. Students and teachers not only accumulated knowledge and appreciation of the other's culture, but also strengthened their belief in the possibility of pro-actively changing society, thus enhancing their ability to work and live together.

What further contributed to this learning was the collaborative way of work. Although PBL work can, and sometimes does, take the form of individual projects, our findings agree with the PBL literature which usually encourages students engaging in PBL to do it through collaborative learning (Shpeizer, 2019; Yiping & MacGregor, 2004). The present study's findings suggest that the students – as well as the teachers – who worked on the multicultural PBL improved not only their general social competence and skills, but also their ability to move from a segregated cultural and ethnic point of view toward a more inclusive, and in a way more cosmopolitan, one. Actual collaborative work means that the participants learn with each other and from each other, a process that is "much richer and more enduring than merely 'tolerating' them" (Hansen, 2009). In this sense, the arguments and disagreements that occur between the participants during the project should not necessarily be seen in a negative light. They are part and parcel of any deep human interaction, and indeed of any multicultural society. As Rachel Har-Zion, the school pedagogical counsellor of the Bilingual Arab-Jewish School in Beer-Sheva, puts it: "The project brought forth some of the [multicultural] conflicts, but it has also shown that we must deal with them together, in a dialogical way." And this, surely, is a pre-condition for the advancement of any multicultural society.

9 CONCLUSION

PBL, which is built on the foundations of in-depth, authentic, active and preferably-collaborative learning, provides multicultural education a beneficial ally and mode of pedagogy. This alliance has the potential to foster the art of living together in a heterogeneous multicultural society, as well as students' belief in the possibility of improving such a society. However, for this alliance to be fruitful, it should not be taken lightly. A good deal of guidance and support is needed in the basics of both multiculturalism and PBL, as well as on the cognitive, emotional and practical levels.

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REFERENCES

Anderson, S. K., MacPhee, D., & Govan, D. (2000). Infusion of multicultural issues in curricula: A student perspective. *Innovative Higher Education*, *25*, 37-57. https://doi.org/10.1023/A:1007584318881

Arslan, H. (2013). **Multicultural education: Approaches, dimensions and principles**. In H. Arslan & G. Raţă (Eds.), *Multicultural education: From theory to practice* (pp. 15-34). Newcastle: Cambridge Scholars Publishing.

Baskerville, L. R. (1997). **Distinguishing action research from participative case studies**. *Journal of Systems and Information Technology*, 1(1), 25-45. Retrieved from http://130.18.86.27/faculty/warkentin/ SecurityPapers/Robert/Others/Baskerville1997_JSIT1_1_ActionResearchCaseStudies.pdf

Carr, W., & Kemmis, S. (1986). Becoming critical. Lewes: Falmer Press.

Chandler, A. (2015, September 8). *Must-know Buck institute project-based learning resources*. Retrieved from https://www.gettingsmart.com/2015/09/must-know-buck-institute-project-based-learning-resources/

D'Ambra, L. N. (2014). A case study of project-based learning in an elementary school setting (Master thesis). Retrieved from Open Access Master's Theses (Paper 428), https://digitalcommons. uri.edu/theses/428

Gorski, P. (2010, April 14), **Multicultural education working definition**. *EdChange and The Multicultural Pavilion*. Retrieved from http://www.edchange.org/multicultural/initial.html

Hagar: Jewish Arab Education for Equality. (n.d.). Retrieved from https://www.hajar.org.il/en/home/

Hansen, D. (2009, January 8). *Cosmopolitanism and education today*. Retrieved from https://www. tc.columbia.edu/articles/2009/june/cosmopolitanism-and-education-today/

Israel Central Bureau of Statistics (December 2021). *Population of Israel on the eve of 2022*. Retrieved from https://www.cbs.gov.il/en/mediarelease/Pages/2021/Population-of-Israel-on-the-Eve-of-2022.aspx

Mandel, E. R. (2018, February 19). What do the Palestinian citizens of Israel want? *The Jerusalem Post.* Retrieved from https://www.jpost.com/Opinion/What-do-the-Palestinian-citizens-of-Israel-want-543070

Markham, T., Larmer, J., & Ravitz, J. (2003). *Project based learning handbook: A guide to standards-focused project based learning for middle and high school teachers* (2nd ed.) Novato, CA: Buck Institute for Education.

Mori, M. (2009). Zionism and the Nakba: The mainstream narrative, the oppressed narratives, and the Israeli collective memory. *Kyoto Bulletin of Islamic Area Studies*, 3(1), 89–107. Retrieved from https://kias.asafas.kyoto-u.ac.jp/1st_period/contents/pdf/kb3_1/07mori.pdf

Morris, B. (2003). *The birth of the Palestinian refugee problem revisited*. Cambridge: Cambridge University Press.

Mossawa Center (2006). *The Palestinian Arab citizens of Israel: Status, opportunities and challenges for an Israeli-Palestinian peace*. Retrieved from http://www.mossawa.org/eng//Public/file/02006%20The%20Palestinian%20Arab%20Citizens%20of%20Israel%20Status.pdf

Norley, K. (2013). Language, social class, ethnicity and educational inequality. In H. Arslan & G. Rață (Eds.), *Multicultural education: From theory to practice* (pp. 103-118). Newcastle: Cambridge Scholars Publishing.

Rață, G. (2013). **Bi-, cross-, multi-, pluri-, or trans-cultural education?** In H. Arslan & G. Rață (Eds.), *Multicultural education: From theory to practice* (pp. 3-14). Newcastle: Cambridge Scholars Publishing.

Reilly, C. R. (2010). **Participatory case study**. In A. J. Mills, G. Durepos & E. Wiebe (Eds.). *Encyclopedia of case study research* (pp. 658-660). California: Sage, Thousand Oaks.

Shpeizer, R. (2019). Towards a successful integration of project-based learning in higher education: Challenges, technologies and methods of implementation. Universal Journal of Educational Research 7(8), 1765-1771. https://doi.org/10.13189/ujer.2019.070815

Sleeter, E., & Grant, A. C. (1987). An analysis of multicultural education in the United States. *Harvard Educational Review*, *57* (4), 421-444. Retrieved from https://www.academia.edu/2326546/An_analysis_of_multicultural_education_in_the_United_States

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed.). London: Sage.

Thompson, T. F. (2014, January-March). Effective multicultural instruction: A non-color-blind perspective. *Sage Open*, 1-15. https://doi.org/10.1177/2158244014522070

Yiping, L., & MacGregor, S. K. (2004). Enhancing project-based learning through online betweengroup collaboration. *Educational Research and Evaluation*, *10* (4-6), 419-440. https://doi.org/10.1080 /13803610512331383509

SOBRE A ORGANIZADORA

Teresa Margarida Loureiro Cardoso é licenciada em Línguas e Literaturas Modernas, variante de Estudos Franceses e Ingleses, Ramo de Formação Educacional, pela Faculdade de Letras da Universidade de Coimbra (2001). É Doutora em Didática pelo Departamento de Didática e Tecnologia Educativa (atual Departamento de Educação e Psicologia) da Universidade de Aveiro (2007). É Professora-Docente no Departamento de Educação e Ensino a Distância (anterior Departamento de Ciências da Educação) da Universidade Aberta, Portugal (desde 2007), lecionando em cursos de graduação e pósgraduação (Licenciatura em Educação, Mestrado em Gestão da Informação e Bibliotecas Escolares, Mestrado em Pedagogia do Elearning, Doutoramento em Educação a Distância e Elearning), e orientando-supervisionando cientificamente dissertações de mestrado, teses de doutoramento e estudos de pós-doutoramento. É investigadora-pesquisadora no LE@D, Laboratório de Educação a Distância e E-learning, cuja coordenação científica assumiu (2015-2018) e onde tem vindo a participar em projetos e outras iniciativas. nacionais e internacionais, sendo membro da direção editorial da RE@D, Revista Educação a Distância e Elearning. É ainda membro da SPCE, Sociedade Portuguesa de Ciências da Educação, e membro fundador da respetiva Secção de Educação a Distância (SEAD-SPCE). É igualmente membro da SOPCOM, Associação Portuguesa de Ciências da Comunicação. Pertence ao Grupo de Missão "Competências Digitais, Qualificação e Empregabilidade" da APDSI, Associação para a Promoção e Desenvolvimento da Sociedade da Informação, é formadora creditada pelo Conselho Científico-Pedagógico da Formação Contínua do Ministério da Educação, autora e editora de publicações, e integra comissões científicas e editoriais.

> http://lattes.cnpq.br/0882869026352991 https://orcid.org/0000-0002-7918-2358

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