

LESSONS, DISCOVERIES, CHALLENGES, AND RESULTS IN AN INTERDISCIPLINARY LEARNING COMMUNITY OF HIGHER EDUCATION TEACHERS

Tatiana Sanches¹, Cristina Duarte², Mariana Batista³, Joana P. Miranda⁴

¹*UIDEF, Instituto de Educação, Universidade de Lisboa (PORTUGAL)*

²*Centro de Administração e Políticas públicas (CAPP), Instituto Superior de Ciências Sociais e Políticas, Universidade de Lisboa (PORTUGAL)*

³*Faculdade de Medicina Veterinária, Universidade Lusófona de Humanidades e Tecnologias (PORTUGAL)*

⁴*Research Institute for Medicines (imed), Faculty of Pharmacy, Universidade de Lisboa (PORTUGAL)*

Abstract

The present study describes how a group of higher education teachers, from different disciplinary areas, came to constitute themselves as a learning community. Learning communities allow the exchange of information, tools, experiences, innovative practices, as well as knowledge transfer between colleagues in a faster and a more relevant way. Despite the disciplinary diversity, the focus on university pedagogy grounded new practices. Teachers learned lessons through peer observation, discovered skills and competencies in the joint discussion, and accepted challenges to witness their experiences in professional forums foreign to their previous experience. It should be noted that the collaborative learning experience factor, which counts on another teacher as a reflective pair, allowed progressive social learning in this learning community that is ongoing for two years.

Keywords: Higher Education Teachers, Learning Community, Community of Practice, Higher Education Pedagogy.

1 INTRODUCTION

Lifelong learning processes are essential so that higher education teachers can adopt new thinking structures and different action projects, renewed interaction strategies that stand out so that the contents are better understood, assimilated, and critically thought out in the classroom, as recommended in pedagogical guidelines [1-2]. It is also important to “encourage peer-evaluation, constructive feedback and coaching as ongoing practices to foster a “learning community” approach to quality teaching” [3, p. 19]

Higher education teachers in Portugal do not have mandatory training for their professional practice. Additionally, there are no professional organizations that provide sustainable communities for their academic development [4]. However, “national regulations rarely require or prompt academics to be trained in pedagogy or to upgrade their educational competences over their professional life span” [3, p. 13]. As such, to develop their skills, they seek support at the local and even at the inter-institutional level, look for formal training (graduate courses, workshops, conferences, and other events), or contact colleagues informally or in peer observation programs. Still, the gap between knowledge and pedagogical practice is notorious, and it is assumed that a solitary experience both in their practice and in their professional identity is expected. Nevertheless, there are positive outcomes arising from spontaneous communities, which have managed to achieve results. This is the context for the proposed study: to explain the creation and development of a small learning community of higher education teachers from different institutions and scientific fields.

The Post-Graduation in Higher Education Pedagogy in Portugal was the meeting point for four teachers from the areas of Social Work, Education, Pharmaceutical Sciences and Veterinary Medicine. The pedagogical activities that took place there raised questions about the teaching practices and several participants recognized identical concerns, while seeking to (re)define their performance, since, as previously mentioned, new forms of joint action open the door for the need for higher education teachers' pedagogical preparation, which has become a social and professional imperative.

1.1 Communities of practice and learning communities

According to Addams [5], learning communities are groups of people that form to learn from one another and that share common norms and established practices. A learning community can develop in a classroom, within a professional group, in a shared housing situation, or even in an online scenario. As stated by the same author, unlike traditional learning approaches or paradigms that emphasize individual mastery or success, learning communities prize shared success, emphasize cooperation and collaboration, and discourage competition. On the other hand, a community of Practice is “any group of people engaged in a similar activity who share knowledge about the activity in order to increase expertise and solve problems (...) It recognizes learning as not just a cognitive process in which a learner passively absorbs information delivered by an instructor, but as a social, relational process in which knowledge spreads through group interaction and exchange” [6]. Communities of practice fit into the context of social learning theory [7], which holds that new behaviors can be acquired by observing and modeling others [8]. For Wenger et al., the development of the concept of communities of practice argues that learning does not depend on the individual, but is a social process that is situated in a certain cultural context [9]. Therefore, if we take higher education as the situational and cultural context, we understand that it is an area conducive to learning, reinforcing, and valuing behaviors by co-workers. In other words, in communities of practice, because the negotiation of learning is the convergence of participation and reification, both afford and sustain the kinds of meaning that can be created and the kinds of person that participants can become.

We can ask ourselves what it means to become a person or to create a community of mutual recognition, seeking to consider whether society has the political resources to forge a new agreement for social justice and social cohesion. As stated in a previous study [10], experience is not a sensation, nor does it mean an experienced craftsman; knowledge is born of experience and experiment, but is formalized when abstracted from its source of experience. So, the community of practice itself has an important intention, to understand what each person is not yet, but has the potential to become, based on interactions with their peers. Communities of practice provide a context for sustained professional conversations around identified domain and practice issues [11].

Foreign to these contexts [12-13], in the case of schools, several authors have supported the construction and development of student communities of practice and learning [14-15], and more frequently of teachers, across several disciplines [16], and throughout the entire education system [17], [18], sometimes enhanced by digital technologies [19-20]. However, it is in higher education that we find more testimonies of the value and impact that these communities provide and spread, especially in improving pedagogical performance of the teachers involved [21], and also in the construction of the curriculum [22], teaching [23], leadership [24], and learning dynamics [25-26], and in the political structures. Overall, faculty learning communities create connections for isolated teachers [27], establish networks for those pursuing pedagogical issues, meet early-career expectations for the community members, foster multidisciplinary curricula, and begin to settle down community to higher education [28]. Indeed, it seems that the increasing growth of these communities in higher education is based on the belief that there are benefits to many aspects of practice within a university setting [29], namely in terms of innovation and collaborative research [27, 30-31].

Additionally, teacher identity development within a community of practice makes a valuable contribution to the existing base knowledge and current debates and how this can be supported by higher education institutions offering teacher training programs. More specifically, professional identity development is linked to the importance of a practice community, where joint reflection and action can add value to the continued development of any teacher. Anyone in the teaching profession needs to engage in reflexive practice when standing in front of a class and putting theory into practice [32]. By understanding one's strengths and areas for further development, a teacher can build self-confidence and develop a repertoire of skills and resources that can be mobilized within the school context. These are all objectives that can be more easily achieved within communities of practice. Thus, it is legitimate to consider that the importance of collaboration within a practice community, where joint reflection and continued action is fundamental [33]. More specifically, the way in which teachers engage in reflection and action cycles, while assuming joint responsibility for their professional development, in communication with others in the field, demonstrates that this participation can result not only in theoretical construction, but also in positive changes and continued future practice development.

2 METHODOLOGY

This study is based on the experience of four teachers who attended the Post-Graduation in Higher Education Pedagogy, in Portugal. Herein, pedagogical matters were the motto for discussion, allowing for a deeper reflection and debate that resulted in renewed professional practices.

In this sense, the case study methodology is used, theoretically framed by the document of the Joint Research Centre of European Commission [34], which describes the success conditions for Communities of Practice. According to this guiding document, there are several areas for establishing successful conditions: 1) a shared vision, 2) participation and engagement, 3) community knowledge, 4) trust, confidence and the sense of community, and 5) inclusive communication. Based on these lines, the study focused on the teachers' reality, to understand transversal phenomena while interpreting their particular experiences. Moreover, a chronology is made, based on the collection of their testimonies. The study describes how some teachers come to constitute themselves as a learning community and explains how this path was taken.

3 RESULTS

3.1 Becoming a community of practice: a tale in three moments

3.1.1 *The first moment: get together*

The Post-Graduation in Higher Education Pedagogy is an integral part of the strategies of the University of Lisbon, Portugal, through its Institute of Education, to expand and develop teaching and learning quality, as well as to support teachers' professional development. In a context of major transformations in higher education, of profound social changes that affect all systems of a society, the Post-Graduation in Higher Education Pedagogy is a response to the great challenges that institutions and teachers face today. Those challenges largely result from the globalization process, international cooperation agreements creating the influx of a large number of students to undergraduate and graduate courses, coming from distinct school trajectories; the growing demand for the integration of new technologies and the movement of students in various learning environments; traffic and speed with which knowledge crosses and consolidates. The Post-Graduation is, therefore, targeted at higher education teachers receiving candidates from all scientific areas. This training is designed to train competent and humane higher education teachers, capable of developing and evaluating their practices; create favorable conditions for improving the students learning experience as well as promoting a humane and humanizing teaching-learning process. To this end, the Course is organized around two major interconnected training domains. Teaching and learning in higher education are centered on the teacher's role as a support for student learning; and the Development of professional practice is centered on the teacher's role as a subject capable of developing self- and hetero-observation practices, thus improving their teaching and assessment methods. The Course includes mandatory Curricular Units (Curriculum Planning and Flexibility, learning environments and active learning, workshop on Practice Observation and Analysis I, student assessment and feedback, guidance and supervision of academic work, workshop on Practice Observation and Analysis II) and optional Curricular Units (Teaching in the area of health sciences, Teaching in the area of social sciences, digital technologies in higher education, pedagogical coordination, and group management, environments, and devices for distance learning, diversity and inclusion, academic writing, supervised professional practices), which are articulated vertically and horizontally.

In a learning exercise, students (who are higher education teachers) were proposed to perform an autopsy regarding their pedagogic practices and teaching styles in the classroom. It seems important to revisit these testimonies here, as they mark the beginning of the path of reflection on professional practice.

One statement (testimony 1) refers to the importance given to improving organizational and planning skills, which were manifested early on. The vision of the profession anchors the role of the teacher, now more mature, who sees the school as a living and solidary institution, at the service of culture and knowledge, but also of personal and social growth. At the same time, in the collaboration process, the personal competencies are identified, mainly to encourage individual initiative within a binomial autonomy/responsibility. As such, pedagogical practices were attentively observed, namely time dedicated to class planning, attention to the student (facial expressions, selection of interest and learning from shared personal examples and practical exercises, the adaptation of methods, synthesis of learning, and selection of classes).

The Postgraduate Degree in Higher Education Pedagogy assumes the ability of each teacher to reflect on himself, from the visualization he makes of one (or several) classes he teaches. Self-Auscultation allows the teacher to identify positive aspects of the class, as well as aspects on which there is room for improvement.

At first, in the context of the first workshop on Practice Observation and Analysis, each teacher is challenged to develop this ability to look at himself in a recorded class or tutorial. From the resulting autoscopia and from another testimony (testimony 2), we can infer that listening carefully to the recording of the tutorial is a necessary exercise to “smooth the edges” in the teaching work and move towards the desired transformation of higher education. In the first observation, teachers privileged both the physical posture, the tone and rhythm of the voice, and both of each teacher and the students' physical aspect. It was also observed the process of active listening, and the feedback given to the students. Both students' “silences” and questions to the teachers and to other students were also observed, allowing a superficial analysis of students' thought processes. The observation of recorded classes further enabled the teachers to relive, in a detached position, the time of tutoring, the intensity, and the demand that stems from accompanying students who are already in the training of professional exercise. Observing that, can emphasize the ability to conduct the tutorial session without major time constraints and motivating all students to critically reflect and question. It must also be stressed that there are no major obstacles in communication, since having structured sessions and presenting this structure at the beginning of the tutoring, students participate with increased interest and dynamism. Also, teachers learned that viewing their teaching practice is a starting point for improving personal teaching practices. A testimony (2) highlighted some difficulties dealing with the cameras, which took away some naturalness. And the question arises: “What would it be like to teach while being observed by a colleague, for example, or the curricular unit coordinator?”. The need to improve active listening, without rushing the intervention (when a question needs to be formulated), comes to mind and consequently interrupts the students' speech.

Another observed phenomenon when a teacher visualized the tutoring could be described by the following testimony: “I felt myself tutoring again as if almost everything was happening at that moment, even with the temporal distance since the tutoring took place, even though they were not present in real-time with the students. There are feelings that I identify as the same I experienced the day the tutoring took place. Viewing the recording made me aware that, for the metamorphosis in teaching to happen, there are questions that could have been asked and were not, and unnecessary questions that were asked” (testimony 2).

3.1.2 *The second moment: reflecting, observing, discussing, and publishing*

Peer observation experiences, reflection, discussion challenges, collaboration, and suggestions for assisted classes improved confidence building and made collaborative work in learning as natural. This enabled what Wenger-Trayner & Wenger-Trayner [35, p. 13] referred to: “*learning as a journey through a landscape*”. In the authors' words, “*learning is not merely the acquisition of knowledge. It is becoming a person who inhabits the landscape with an identity whose dynamic construction reflects our trajectory through that landscape. This journey within and across practices shapes that we are. Over time it accumulates memories, competencies, key formative events, stories, and relationships to people and places. It also provides material for directions, aspirations, and projected images of ourselves that guide the shaping of our trajectory going forward*”.

The understanding that collaboration does not always involve evaluation was a necessary step to strengthen confidence among participants. Peers helping peers, which includes teachers visiting each other's classrooms on a regular basis to observe, take notes, and discuss their observations with the visited teacher, improves awareness and allows practice transformation for both parties. This becomes possible when peer feedback is authentic, realistic, respectful, and helpful, facilitating the reflection and followed by improvement and change of pedagogical practices, based on trust and commitment. According to Hord & Sommers [17, p. 15] “this dimension is likely to be the last to develop because of the history of isolation most teachers have experienced”.

In this context, several topics were addressed in regular meetings, which took place in person or by online meeting, at the university, in public spaces, or at each member's home. The results of these reflections and discussions were transformative. In the foreground, scientific production stands out. Here are some of the published works produced after the reflection and discussion in the practice community:

- Ph.D. supervision: doctoral students' perceptions, expectations and needs

- Interdisciplinary class observation in higher education: lessons learned from a professional development experience of four teachers.
- Problem-based learning in a flipped classroom: a case study for active learning in legal education in international law
- Pedagogical guidance: study on the perceptions, expectations and needs of doctoral students
- Interdisciplinary observation as a contribution to personal and professional development
- Pharmaceutical Sciences and Graduate Education: current and future challenges

In order to have a more consistent view of the stages this learning community has experienced a chronology is presented in the following figure.



Figure 1. Chronology of Practice Community actions

After the first peer observation exercise, it was possible to share the reactions and conclusions in a small group about one's own and others' performances. This sharing became the embryo for the formation of the practice community. The teachers involved began to worry about giving meaningful feedback and receiving ideas and proposals from their peers. The climate of trust generated led to more meetings and discoveries.

As can be seen from the chronology, this was the beginning of a more in-depth reflection on the role of each one as a higher education teacher. What would we have learned from an experience? What have we to delve into? Support for doctoral students and tutorial follow-up also emerged as a topic of shared research. We were interested in deepening these investigations to understand, from theoretical studies and common research, the development of the construction of knowledge.

3.1.3 The third moment: lessons, discoveries, and challenges

After several months in action, the practice community had achieved great success and is ongoing, constituting part of the identity of these higher education teachers. The results – everything that has been achieved so far professionally, particularly at the pedagogical and research level, is shown in the following table which resumes the current testimony of this community.

Table 1. Testimonies about Practice Community participation impact

| | <i>Knowledge and Information</i> | <i>Tools and Strategies</i> | <i>Pedagogical experience</i> | <i>Students' assessment and feedback</i> |
|-----------------|--|--|--|--|
| Testimony One | Although not what I was looking for, I did learn a few things about veterinary anatomy, pharmaceutical sciences, and social work. This transdisciplinary knowledge allowed me to look again at learning as something new and attractive, where the teaching format is intrinsically linked to the given subject. | The type of work proposals for students, the different ways in which they participate in class and the structure that each one uses to delimit knowledge were subjects on which I was able to reflect in more depth. | I renewed the way of teaching, mainly online, where I was able to introduce active learning methods. The inclusion of activities focused on competences and not so much on the knowledge to be acquired was a very important step in improving my pedagogical practice | I also became more flexible in the forms of evaluation. The attention given to different learning styles led me to think about different complementary assessment and feedback proposals, taking into account the diversity of students in higher education. |
| Testimony Two | It allowed me a better understanding of other disciplinary areas, with regard to the curriculum as well as teaching methodologies, which can be adopted in other areas. The experience gave the enrichment of interdisciplinarity | Improved communication strategies and feedback to students. Different forms/elements of evaluation are thought about and considered. | Thinking and rethinking teaching, as a daily reason for reflection. Greater commitment to a self-analysis led me, also with the sharing of colleagues, to improve all the teaching-learning processes. | Adaptation of feedback to students, looking at the particularities of each one. (Re)create and think about other ways of evaluating. Greater attention and motivation to the creative potential of each student. |
| Testimony Three | The whole process is an enrichment experience both at the professional and personal level. The acquisition of new knowledge not only increases my general knowledge but also can be used in classes. Many strategies used by others can indeed be easily used transversally. | Implementation of new pedagogical tools adapted to each audience. Clarify in each class what are the objectives and expected outcomes. | It created awareness into my teaching practices. A reflection process prior to the implementation of any class or teaching process. | Major focus in the students learning success, which implied a shift in the evaluation process. Namely by providing feedback throughout the learning process that eventually could replace a final exam. |
| Testimony Four | The community allows me to share my experiences and difficulties and acquire new and sometimes unexpected views on several subjects. The inputs gathered from other disciplinary areas are often refreshing and quite useful. Also, to see myself through foreign eyes allowed me, a new teacher, a more confident approach. | Implementation of a formal structure in the organization of my classes and an improved communication with the students regarding class objectives. | A conscientious effort in analysing each class, reflecting not only on student perceived understanding of the subject but also on what can be improved for the next class. | Implementation of some strategies to diversify student evaluation, with the ultimate goal to achieve a more holistic continuous evaluation. |

Once established, the monthly discussion group, accompanied by socializing, was well attended to. The biggest barrier to participation was not self-motivation, but individual schedules that could prevent attendance. However, meetings were always adjusted to allow everyone's attendance. After these couple of years of community activity, a list of scientific productions, which resulted from the meeting's many emerging discussions, remains available for consultation and reflection. The interactions between all the participants drove the development of new research skills, organization of data and information, reflection, and academic writing, along with improvement of pedagogical practices. Host or organizing one of the social events in this community became itself a self-motivator for individuals to discover and share new ideas or scenarios for the overall learning and benefit of the community.

A notable result of this turnover was the variation of topics related to teaching and learning in higher education that was introduced, always focusing on pedagogical practices. It was possible, through the interdisciplinarity of the areas of origin of each participant, an expansion of understanding and knowledge in face of the complexities of other people's subjects. At the same time, all participants considered they experienced a deepening of self-awareness in the field of pedagogical practice. When researching relevant topics, new avenues of investigation were opened, providing several readings and discussions about the self-awareness of each one in the role of a higher education teacher.

4 DISCUSSION: PRACTICAL STRATEGIES FOR ENGAGEMENT

Along with networks, projects, conversations, and relationships, communities of practice are ways to forge new learning partnerships, create new capabilities, and enable new pedagogical identities, in order to transform practice [35]. This transformative action is a consequence of will, diversity of voices, and differences, where power is diluted by peer relationships but is reinforced by the sharing and reconfiguration of professional identity. The participants of this community of ideas were found to be more capable of self-reflection and, therefore, of innovation and of flexibilization of ideas. All the participants who take this risk and cross disciplinary boundaries, do so based on the common trait – the aim to enhance higher education pedagogy. Breaking pre-established borders allows the emergence of new capacities and competencies, new possibilities of action, which are supported by sharing. It is legitimate to conclude that, despite focusing on a case, this study can inspire other higher education teachers to overcome barriers of isolation and seek peers with whom they can share concerns, ideas, strategies, and pedagogical practices.

In summary, and according to the literature [34], we can list some characteristics of this community of practice that have ensured its success:

- Shared vision
- Participation and engagement
- Community knowledge retention and circulation
- Trust, confidence and the sense of community
- Inclusive communication

Finally, what kind of recommendations can we leave for other teachers to try these strategies? We believe that building and maintaining a community of practice is not simple. It is, however, very rewarding. The personal investment that each participant makes, when trusting their peers with both doubts, and hesitations, but also goals, and achievements, will create the basis for the authenticity of relationships.

What benefits do we point out as evident? From these shares, all stakeholders gain - the teachers who grow professionally, as it is within their power to improve with the help and support of peers, but also the institution, which benefits from its scientific production and the pedagogical improvements implemented, as well as the students, recipients of qualitative changes. So, how to build commitment to pedagogical practice in higher education? The commitment is made on a joint path, with the share of not only good moments, but also with less good. Believing that by being part of a group we can encourage and be encouraged, in a pendulum movement of giving and receiving, and ultimately benefit emotional, personal, and professionally, which contributes to meaning and purpose of the educational mission in which we participate.

5 CONCLUSIONS

Collaborative learning processes require time, trust, and commitment, as well as persistence and resilience. Higher education teachers are not always willing to think about their pedagogical practice and this path is more difficult if done solo. The journey reported here is a testimony to the successful experience of communities of practice. Yet, it should be highlighted that this work relies on the voice of a reduced number of informants, so many other studies need to be done on this matter. Although limited conclusions can be taken out from these results, as well as from their meaning and implications, research with such results can be considered an inspirational example. The present study revealed that the challenges faced in teaching and curricular construction, in the design of tasks and activities or the assessment, were enriched from perspectives from different disciplinary areas towards a better teaching

and learning processes. This corroborates current literature mentioning the advantages and benefits of learning communities as infrastructures for collaborative learning.

REFERENCES

- [1] I. Noben, J. F. Deinum, e W. H. A. Hofman, «Quality of teaching in higher education: reviewing teaching behaviour through classroom observations», *Int. J. Acad. Dev.*, vol. 00, n. 00, pp. 1–14, 2020.
- [2] OECD, *Learning Our Lesson: Review of Teaching Quality*. 2010.
- [3] F. Hénard e D. Roseveare, «Fostering Quality Teaching in Higher Education: Policies and Practices», 2012.
- [4] Eurydice, «National Education Systems: Portugal overview», 2022.
- [5] S. R. Adams, «Learning Community», *Salem Press Encyclopedia*. 2019.
- [6] A. Groff, «Community of practice», *Salem Press Encyclopedia*. Research Starters, 2020.
- [7] E. Wenger, *Communities of Practice: learning, meaning, and identity*. Cambridge University Press, 1999.
- [8] M. P. dos Santos, «Um olhar sobre o conceito de ‘Comunidades de prática’», pp. 1–16, 1991.
- [9] E. Wenger, R. McDermott, e W. Snyder, *Cultivating communities of practice: a guide to managing knowledge*. Boston: Harvard Business School Press, 2002.
- [10] S. Ranson, «A pedagogy of cooperative learning», em *Education and Democratic Participation*, 1st ed., London: Routledge, 2017.
- [11] J. McDonald e C. Star, «Designing the future of learning through a community of practice of teachers of first year courses at an Australian university», *First Int. LAMS Conf. Des. Futur. Learn.*, n. December, p. 13, 2006.
- [12] D. Barton e K. Tusting, Eds., *Beyond Communities of Practice: language, power and social context*. Cambridge University Press, 2005.
- [13] C. H. Gola e L. Martin, «Creating an Emotional Intelligence Community of Practice: A Case Study for Academic Libraries», *J. Libr. Adm.*, vol. 60, n. 7, pp. 752–761, 2020.
- [14] R. DuFour, R. Dufour, R. Eaker, e T. Many, *Learning by doing: a handbook for professional learning communities at work*. Bloomington: Solution tree, 2006.
- [15] J. Morton, «Communities of practice in higher education: A challenge from the discipline of architecture», *Linguist. Educ.*, vol. 23, n. 1, pp. 100–111, 2012.
- [16] V. A. Goodyear e A. Casey, «Innovation with change: developing a community of practice to help teachers move beyond the ‘honeymoon’ of pedagogical renovation», *Phys. Educ. Sport Pedagog.*, vol. 20, n. 2, pp. 186–203, 2015.
- [17] S. M. Hord e W. A. Sommers, *Leading professional learning communities: voices from research and practice*. Thousand Oaks, CA: Corwin Press, National Association of Secondary School Principals, 2008.
- [18] S. M. Hord, J. L. Roussin, e W. A. Sommers, *Guiding Professional Learning Communities: inspiration, challenge, surprise, and meaning*. Corwin Press, 2010.
- [19] E. M. T. de M. T. Pereira *et al.*, «Aprendizagem situada e comunidades de prática», *Educ. em Rev.*, vol. 22, n. 2, pp. 105–120, 2021.
- [20] C. Hodgkinson-Williams, H. Slay, e I. Siebörger, «Developing communities of practice within and outside higher education institutions», *Br. J. Educ. Technol.*, vol. 39, n. 3, pp. 433–442, 2008.
- [21] N. S. Shapiro e J. H. Levine, *Creating Learning Communities: a practical guide to winning support, organizing for change, and implementing programs*. San Francisco, CA: Jossey-Bass, 1999.
- [22] M. J. Keppel, *Instructional design: case studies in communities of practice*. Hershey, NY: Information Science Publishing, 2007.

- [23] I. Westbury, *Teacher Education in Professional Learning Communities: Lessons from the Reciprocal Learning Project*, vol. 15, n. 3. 2020.
- [24] T. Burch, J. McDonald, J. Nagy, F. Star, C., Cox, M., Margetts, e E. Collins, *Identifying , building and sustaining leadership capacity for communities of practice in higher education Literature review*. 2012.
- [25] A. R. Viskovic, «'Community of Practice' As a Framework for Supporting Tertiary Teachers' Informal Workplace Learning», *J. Vocat. Educ. Train.*, vol. 57, n. 3, pp. 389–410, 2005.
- [26] A. Viskovic, «Becoming a tertiary teacher: learning in communities of practice», *High. Educ. Res. Dev.*, vol. 25, n. 4, pp. 323–339, 2006.
- [27] L. L. Ng e J. Pemberton, «Research-based communities of practice in UK higher education», *Stud. High. Educ.*, vol. 38, n. 10, pp. 1522–1539, 2013.
- [28] M. D. Cox, «Introduction to faculty learning communities», *New Dir. Teach. Learn.*, vol. 2004, n. 97, pp. 5–23, 2004.
- [29] P. Reaburn e J. McDonald, *Creating and Facilitating Communities of Practice in Higher Education: Theory to Practice in a Regional Australian University*. 2017.
- [30] J. Seely e P. Duguid, «Organizational Learning and Communities-of-Practice : Toward a Unified View of Working , Learning , and Innovation John Seely Brown ; Paul Duguid Organization Science , Vol . 2 , No . 1 , Special Issue : Organizational Learning : Papers in Honor of ORGANI», *Organ. Sci.*, vol. 2, n. 1, pp. 40–57, 1991.
- [31] I. Sánchez-Cardona, J. Sánchez-Lugo, e J. Vžlez-González, «Exploring the Potential of Communities of Practice for Learning and Collaboration in a Higher Education Context», *Procedia - Soc. Behav. Sci.*, vol. 46, pp. 1820–1825, 2012.
- [32] M. Zabalza, *Competencias docentes del profesorado universitario: calidad y desarrollo profesional*. Madrid: Narcea, 2007.
- [33] A. Mouraz, S. Rodrigues, M. Guedes, e M. Carvalho, «Contributos da observação de pares multidisciplinares nas práticas reflexivas de professores dos ensinos básico e secundário», *Rev. Port. Invest. Educ.*, vol. 16, pp. 33–54, 2016.
- [34] C. Catana, I. Debremaeker, S. Szkola, e F. Williquet, «The Communities of Practice Playbook», n. February, pp. 1–124, 2021.
- [35] E. Wenger-Trayner e B. Wenger-Trayner, «Learning in a landscape of practice a framework», em *Learning in landscapes of practice*, E. Wenger-Trayner, M. Fenton-O'Creevy, S. Hutchinson, C. Kubiak, e B. Wenger-Trayner, Eds. Routledge, 2015, pp. 13–29.