

How Communities of Practice Help to Maintain an Organizational Practice and Enhance Researchers’ Knowledge: Progress Report IEN, a Case Study

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1. Introduction

This report discusses how a community of practice was important to maintain, even during a crisis period, as the Covid-19 pandemic, the whole process of the Progress Report IEN – PR IEN: an institutional journal of summaries containing the research production of the last three years of *Instituto de Engenharia Nuclear* (Nuclear Engineering Institute) – IEN. In addition, we will demonstrate how this same approach has helped the development of researchers who participate in the community.

IEN is a research and development institute of the *Comissão Nacional de Energia Nuclear* – CNEN – a federal body of *Ministério da Ciência, Tecnologia e Inovações* – MCTI. As a R&D organization, knowledge and its management are fundamental to fulfill IEN’s mission: to “contribute to the well-being of society and its sustainable development through technological innovations and training of human resources for the nuclear and related sectors” [1]. The process of PR IEN and the community of practice itself are two important tools to make the knowledge spiral happen (figure 1) and contribute to establish a healthy environment to knowledge creation [2].

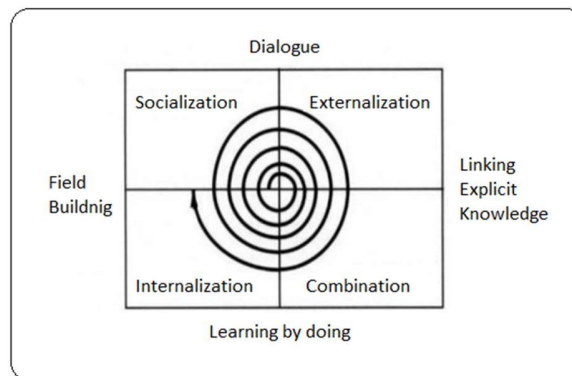


Figure 1: Nonaka and Takeuchi’s Knowledge Spiral [2]

Just like the practice, which is completing twenty years in 2021, the idea of community of practice is not new, according to Etienne and Beverly Wenger-Trayner [3] “The term community of practice is of relatively recent coinage, even though the phenomenon it refers to is age-old”.

Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly [3]

During the last years the PR IEN has been facing difficulties, such as the decrease of IEN'S workforce. Besides, the Covid-19 pandemic has been an unexpected and significant problem. This work demonstrates how the community of practice made possible to deal with this crisis period and finish with success one more edition of an institutional asset.

2. Methodology

For this case study, we raised the intercorrelations between the Progress Report IEN, as a practice, and the variables used by the community of practice.

2.1 Brief view of Progress Report IEN as a practice

The practice was conceptualized at the end of the last century and the first edition was released in May 2001, in Portuguese, and with a different name: *Relatório Técnico IEN* (IEN Technical Report). Throughout the years, the PR IEN has faced modifications more fundamental than its title. This century, remarkable for its dynamical changes – technological, market and values [4] – has shown the necessity to adapt and transform the way of doing things.

After the edition in Portuguese, in 2003 the report is presented with its current title and maintaining the idea of sharing summaries of technical-scientific production written by researchers. In those editions the term technical-scientific was restricted to the “finalistic divisions”: those associated with the organization's end activities, but in a very restricted way. Here, the head of each finalistic division collected and organized the material of its own division and then the IEN's assessorship was responsible to coordinate and publish the material.

But the first impactful change appeared in the 2015 edition: the restricted idea of finalistic areas was abandoned, and the PR IEN followed governance institutional practices: thematic areas [5] were established by the organization and new areas were included, such as knowledge. Furthermore, the new PR IEN proposes the use of Open Journal Systems, an open source software application for managing and publishing scholarly journals [6], where the authors themselves submitted the summaries and IEN's library was responsible to organize the online journal, ending with physical documents and expanding its reach. The 2015 edition also presented an innovation: the community of practice, even if it was not being noticed at that time.

In the next years the practice will maintain its primary changes and assimilate the community of practice as a problem solving tool and to build knowledge, not only to the practice goals, but also to the participants goals: the members belong to different areas, and with different skills and assignments, but share a common interest: to continuously develop a practice linked to knowledge. Figure 2 shows the procedures established for the current edition (each edition has a different workflow that is defined through the necessities of the period).

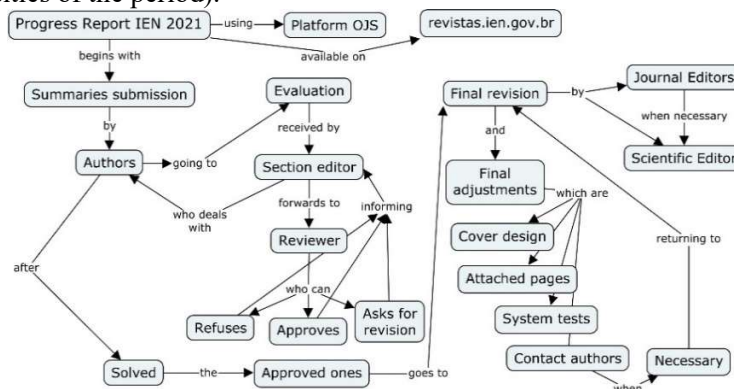


Figure 2: A concept map of The PR IEN 2021's workflow

2.2 Communities of Practice

Communities of practice are formed by people who are interested in learning in some specific domain of knowledge and turns into a collective process [3].

With this specific community, the participants must build and transfer knowledge around the PR IEN including several areas of expertise: knowledge, and knowledge management, IT, processes, institutional governance, publication standards, journal procedures and any other subject that could add a solution or an improvement to the journal process.

Etienne and Beverly Wenger-Trayner [3] advocate that three characteristics are crucial to identify a community of practice:

The domain: defined by a shared domain of interest.

The community: members engage in joint activities and discussions, help each other, and share information.

The practice: members are practitioners. They develop a shared repertoire of resources: experiences, stories, tools, ways of addressing recurring problems.

In IEN's case, these three characteristics were part of the work to accomplish each edition, but this particular year the necessity was increased and strategies to reinforce the group were essential. In this community, the members belong to different areas and with different know-hows and assignments, but with an interest in common: to continuously develop a practice linked to knowledge.

3. Results and Discussion

The last three editions, which include the finished current one, were performed through a community that has a real interest into developing the knowledge that guarantees the process continuity.

The group itself is always changing, both losing and gaining members, but, during its path, concentrates the maximum help possible, and the characteristics quoted above [3] allowed the practice to continue. For example, from discussions about how to deal with the Covid-19 Pandemic, the PR IEN 2021 introduced a modification in its workflow: the Section Editors (see figure 2). Like in congresses, this step intended to place an agent closer to authors, facilitating the information exchange and the idea of stimulating the researchers' participation – authors and reviewers – through this new agent. A total of seven researchers agreed to help and bridge the gap among people, the OJS platform and the journal itself.

To work with an online platform, a decision made in 2015, was also a point that rid us of a problem that otherwise we would have to solve before even thinking about starting the practice. Figure 3 shows the covers of all editions (the online editions are available at revistas.ien.gov.br).



Figure 3: PR IEN's covers (ISSN 2447-6811) showing the practice as a set of efforts

4. Conclusions

The work with an online platform and the community of practice were very important in this difficult time, but it's interesting to add that, besides the current pandemic crisis, the last two decades presented the necessity of multiple roles, for the members, to keep the PR IEN going on. The practice's continuity, the learning assimilated, and the capacity to maintain the information which constructs the practice, has demonstrated the importance of community of practice's help to maintain a project alive and to establish an environment to develop, share and keep knowledge. During this period, the organization has faced the decrease in the number of IEN's workforce: in 1999 [7] the organization had 285 public servants; in 2014 [8], 231 and the last management report presented the number of 145 public servants [9], but even facing this decline (which impacted directly and indirectly the practice), the structure resisted, overcame the difficulties and delivered one more edition.

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