E-MODERATION IN COMMUNITIES OF PRACTICE: A PROPOSAL BASED ON A PORTUGUESE ONLINE COMMUNITY DIRECTED TO SPECIAL NEEDS[i]

Oksana Tymoshchuk[ii][1],
Teresa Sousa[2],
Ana Margarida Almeida[1],
Paula Santos[2]
[1]Department of Communication and Art,
University of Aveiro,
Portugal
[2]Department of Education and Psychology,
University of Aveiro,
Portugal

Abstract:

This article discusses the development of an e-moderation model for an online community in Special Education, whose objective is a more accessible communication between families and education and health professionals. The study used a development research methodology, which involved several complementary steps, including the analysis of existing e-moderation models and interviews with moderators of self-help groups in the area of Special Needs. The proposed e-moderation model presents a convergent approach to existing theoretical models and the practices and dynamics of mutual aid groups in the area of Special Needs. The development of this model has enabled the creation of an online community named *Compartilha*, that aims to promote the sharing of knowledge and resources among these education agents of children and young people with Special Needs.

Keywords: e-moderation model; special needs; online community; collaboration; ICT

Resumo:

Este artigo aborda o desenvolvimento de um modelo de e-moderação para uma comunidade online em Educação Especial, cujo objetivo é uma comunicação mais acessível entre famílias e profissionais de educação e saúde. O estudo utilizou uma metodologia de investigação de desenvolvimento, que envolveu várias etapas

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[ii] Correspondence: email oksana@ua.pt, oksana.agueda@gmail.com

complementares, incluindo a análise dos modelos de e-moderação existentes e entrevistas com moderadores de grupos de autoajuda na área das Necessidades Especiais. O modelo de e-moderação proposto apresenta uma abordagem convergente dos modelos teóricos existentes e das práticas e dinâmicas dos grupos de ajuda mútua no domínio das necessidades especiais. O desenvolvimento deste modelo permitiu a criação de uma comunidade online denominada Compartilha, que visa promover a partilha de conhecimentos e recursos entre estes agentes educativos de crianças e jovens com necessidades especiais.

Palavras-chave: modelo de e-moderação; necessidades especiais; comunidade online; colaboração; TIC

1. Introduction

The research presented in this paper has been driven by the challenge of developing an online community of practice, aiming to promote sharing knowledge and resources amongst education and health professionals and families of Portuguese children/youth with Special Needs (SN). To reach this goal, we have created the *Compartilha* (Shares) website[iii] with the following primary purposes: i) to promote a culture of sharing knowledge, allowing the open exchange of information, resources, materials, and doubts; ii) to encourage communication amongst the different agents involved in the education/rehabilitation process of children/youth with SN; iii) to promote self-training on ICT in the domain of SN; iv) to produce and publish specific learning contents/resources and support the social inclusion of children/youth with SN; v) to develop an online community of practice built up of collaborative and shared knowledge. This online community was created in an investigation developed at the University of Aveiro (Portugal). Its target audience is the ensemble of families and professionals of education and health involved in the education/rehabilitation process of children/youth with SN.

This work presents a proposal for an e-moderation model designed to respond to the challenges of our community. This model is based both on data collected through the application of interviews with moderators of mutual support groups in the area of Special Education, as well as inspired by existing e-moderation models, namely in Salmon (2000), Almenara (2006), and Miranda-Pinto (2009). This model underlines the importance of promoting digital skills acquisition in SN and facilitating communication and collaboration amongst the several agents. The sustainability of the community of practice also has a core concept that guided this e-moderation model, namely in what concerns all members' participation in knowledge production and establishing shared leadership processes.

[iii] https://cms.ua.pt/compartilha

2. Literature Review

2.1 Learning in Online Environments

The construction of an online learning environment is a considerable challenge. Creating an online learning community requires everyone's involvement in the activities of sharing, problem-solving, and collaborative learning. In this way, the learning object becomes a product that results from the content available on the online platform and activities driven by personal interactions and collaborative processes (Dias, 2008). This platform must be seen not as a simple repository but, instead, as a tool to support interaction and collaboration processes and promote emerging learning processes.

An online learning environment can be structured considering four elements: i) the methodological framework; ii) the supportive technologies; iii) the human context; and iv) the systematic vision that characterizes the environment (Meirinhos, 2010). Besides these elements, learning environments must also display a simple and interactive interface that is as straightforward as possible, preventing the graphical dimension overlaps contents, messages, and interactions amongst the participants (Miranda, 2005). Although the learning environment's design does not determine the learning activities, it can limit some activities and become a factor of discouragement and inhibition to the participants.

Many authors suggest that human relationships inside an online learning environment need to be encouraged through the inducement of a sense of belonging to the community and by using strategies that support the members to feel part of it and work together for a common cause (Muilenburg & Berge, 2003; Wissmann, 2005). The ultimate goal is to create a friendly and sociable online learning environment. In this context, these environments' main purpose should be to facilitate the interaction among the participants, granting them the chance to learn from each other on debates, ideas and experiences exchange, and knowledge sharing (Duggleby, 2002). To accomplish this, online environments generally contain several communication and collaboration tools that simplify the process of sharing content and administration tools that allow the management of the participants' access and registration (Morais & Cabrita, 2008).

According to Fernández and Cáceres, the online learning environments must recreate the social process *of the building of knowledge that takes place in the negotiation of meanings in the classroom* (2014, p. 98). In this point of view there is a very important «emotiveness» component being expressed in several situations. This "emotiveness" component is significant to reach "*effective communication*" in an online environment and can be noticeable through the use of emotes, punctuation, emoticons and capital letters in written resources (Fernández & Cáceres, 2014).

Despite these communication and collaboration features, many authors describe interaction problems in learning environments essentially as pedagogical issues (Dillenbourg, 2003). Therefore, the challenge is to turn the interaction into something productive to the learning process, the human dimension having a crucial role in this process: communication, interaction, participation, involvement, goals' establishment,

challenges and dynamics generated, cooperative production, identity and cohesion as fundamental components of the creation and progress of a learning community (Meirinhos, 2010).

Under the context of the particularities observed in the SN field, learning environments can be a very important asset for the training process of both parents and professionals in the use of technology in the SN field, providing new scenarios that multiply the opportunities for sharing, cooperating and exchanging experiences (Martika et al., 2016; Nunes, 2013 Rodrigues, 2011). These online environments promote digital literacy and connection amongst different professionals and different generations (Sánchez, Kaplan & Bradley, 2015), having the potential of playing a pivotal role in special education practices. These interactions and digitally mediated sharing processes in online learning environments are of most importance, not only for knowledge construction, but also for bringing closer families, education and health professionals that assist children/youth with SN.

2.2 Communities of Practice

A community exists when a group of individuals shares a particular interest, concern, or motivation on a specific subject, interacting proactively to learn more about that theme (Wenger, MCDermott & Snyder, 2002). According to Wenger (1998), Communities of Practice (CoP) can be defined as groups of individuals that share the same concern or passion for something they do and regularly interact to learn how to do it better. According to this author, a CoP is based on three levels: mutual commitment, enterprise and shared repertoire. In other words, a collaborative learning results of a coherent practice and of the community's own identity. Miranda-Pinto (2012) highlights that, for the development of effective dynamics inside the community, it is essential that all its members feel responsible for its growth. The moderators' role must be putting into practice in a strategic and structured way, new forms of communication, so regular content renovation can be endorsed to promote participation.

Communities of practice have many positive impacts: they give its members the chance to improve their practice throughout the continuous knowledge creation (Wenger, 1998); they promote innovation as a result of knowledge, experiences and ideas exchange and debate (Saint-Onge & Wallace, 2012; Wenger & Snyder, 2010); they grant access and feedback on ideas (Wasko, Teigland & Faraj, 2009), allowing members to "*throw away old ideas and find new solutions for problems*" (Fahey, Vasconcelos & Ellis, 2007, p.188). CoP are tools for knowledge assessment and competences acknowledgment, enhancing self-esteem, respect, and individual status since its members can express their identity and be recognized as experts by the group (Fahey et al., 2007).

We believe that in the SN field, and given its diversity and specificities, these dynamics can promote the dialogue amongst the different agents, simplifying the education/rehabilitation process of children and youth with SN. Szabó and Silva (2012) refer that CoP usually has a life cycle linked to the project length, and this can be seen as a problem when it comes to maintaining the dynamics of the SN communities. The

expression of emotions and feelings is often expressed in face-to-face groups through non-verbal forms of communication, hardly transmitted in online environments (Miranda-Pinto, 2009; Nunes, 2013). Garrison and Anderson (2003) state that personalized greetings and specific language for these environments (such as capital letters, punctuation, and emoticons) may minimize this lack of social pragmatism in online environments.

2.3 E-moderation Process

Miranda-Pinto (2009) emphasizes that the development and sustainability of a learning community depend upon many aspects, such as the involvement of all community members on the knowledge-building processes, the definition of moderation processes, and shared leadership. According to Dias (2008), e-moderation arises as a regulatory action of group organization processes and learning activities in virtual environments, mainly prevailing on dynamics, management, and follow-up forms. It is in this context that the role of the e-moderator emerges as vital for the community. In agreement with Salmon (2000, p. 3), *"the main role of the e-moderator is to promote participants' involvement in a way that the knowledge they create can be used in new and different situations"*.

2.3.1 Salmon Model (2000)

Considering the e-moderator as an essential piece for boosting and promoting the participants involved in the learning process, Salmon (2000) suggests an e-moderation model with five steps. The first stage's main concern is the individual access to the online environment and one's motivation and ability to use it. The second stage involves online participants' identities, related-matters and interactions amongst participants. On a third stage, the community routine focuses on sharing information accordingly to each participant's individual goal. The fourth stage expects a shared process of building up knowledge and cooperative interactions amongst participants. The fifth stage assures the community's future sustainable development in a way that each participant can benefit even more from the system and reach their individual goals. The technical support and the e-moderation intersect these several stages in density levels of the community participants' expected interaction processes.

2.3.2 Almenara Model (2006)

The Almenara model (2006) is worth mentioning amongst other existing models because it was conceived for an online training course to extend knowledge using new technologies in education. The model comprises three significant stages structured with different goals: attesting technical skills, socializing, presenting information, presenting intervention strategies, working on interaction, building up knowledge synthesis and, finally, supporting catharsis review.

The first stage of this model is for participants to socialize, ensuring that all of them can deal with the communication tools in use and are aware of the participation rules. On the second stage, participants are expected to interact in order to build up knowledge,

discuss issues and come to a deal. On the third stage, participants ought to review the learning process, expose their critiques and point out difficulties. For each of these stages, the e-moderator must intervene in a particular way: in the first stage, he/she will assume an encouraging and intervenient role; on the second, he/she will supervise and cheer; and on the last stage, he/she will be a critical reviser.

Almenara (2006) proposes, therefore, the promotion of cooperative learning by preparing the participants to assume and accomplish the group´s commitments, to help colleagues, to ask for other persons' help, to learn to accept colleague's opinions, to reach solutions that benefit the whole group, and to share their ideas and approaches on a supportive way.

2.3.3 Miranda-Pinto Model (2009)

The Miranda-Pinto model (2009) was created for an online community of practice (CoP). This model was structured throughout the qualitative analysis of the participants' interactions in the debates and in the chat of an online platform. This analysis allowed to understand the gradual integration of the participants in the community, as well as to study online community's life cycle evolution. This model's configuration consists of five dimensions that typify interactions inside an online CoP: social and sharing dimension (interpersonal relationships setting/negotiation); mutual commitment and cooperation dimension (cognitive interaction); identity construction dimension (differentiation); leadership and moderation dimension (sustainability factors); finally, collaboration and knowledge construction dimension (metacognitive interaction). According to the author, these multiple dimensions must be strengthened to affirm and create this kind of community's identity.

We consider that the presented models may work as guidelines for CoP development processes, as they underline the importance of the roles that can be performed by moderators and participants in these new online environments.

3. Material and Methods

This work is being developed under the scope of a research project at the University of Aveiro (Portugal). This study aims to develop an e-moderation model for an online community in Special Education that aims to promote the sharing of knowledge and resources among the education agents of children and young people with special needs. This research's target public is parents plus health and education professionals involved in the education/rehabilitation process of children/youth with SN.

This study is mainly framed by a "*development research*" approach in which we use theoretical knowledge to study a practical problem' solution context (Coutinho, 2009). This study is carried out in different stages, according to the methodological approach adopted.

In the first step, a survey was applied to parents and experts to gather and analyse data regarding the opportunities for training and sharing of information on the ICT field for SN. In total, five persons were interviewed, as described below.

Table 1: Characterization of respondents

Participant	Description
A-1	A moderator of the Portuguese face-to-face SN parent support group, "Oficinas de Pais" (Parents Workshops) promoted by a project launched by the "Associação Pais em Rede" (Parents Networking Association), in 2012. Each workshop comprised eight sessions that took place within about three months;
A-2	A participant of one of the "Oficinas de Pais" (Parents Workshops) promoted by the "Associação Pais em Rede", in 2015.
A-3	A participant of a Portuguese face-to-face "Grupo de Partilha e Orientação Técnica" (Sharing and Technical Orientation Group - GPOT/STOG) of the "Associação Diferentes e Especiais" (Different and Special Association). The members of these groups are the relatives of children and youth with SN who meet regularly to share their stories, experiences, and emotions. These meetings usually take place once a month, since 2011;
A-4	The mentor/manager of the Portuguese online group "Pais 21" (Parents 21), which is a restricted mutual support group of Google Groups that exists since 2008, and whose members use email to share victories, defeats, doubts, strategies, and resources, among others;
A-5	An e-moderator of the Portuguese online practice community "Multideficiência: pais e docentes em rede" (Multiple Disabilities: a network of parents and teachers), that took place from 2009 to 2012.

Three of these five persons were mothers of children/youth with SN, and two were education/health professionals. The criteria used to select these five interviewees was the fact that they boost/take part in well succeeded and sustainable mutual support communities in the SN field in Portugal. Both face-to-face and online groups were considered, as we believe in the importance of collecting different perspectives when analysing this phenomenon.

The interview protocol was structured to design a script of questions concerning the following topics: i) identification of the factors that motivate persons to participate in mutual/self-support groups; ii) communication styles used to moderate sessions; iii) leadership strategies; iv) circumstances that favour the group evolution and questioning strategies used by the group; v) strategies and dynamics of mutual support and self-support; vi) evidence of sharing of resources/situations/strategies that have been helpful; vii) evidence of collaborative production of materials and situations/strategies that have been helpful. As a result of this script, we have defined categories for the content analysis of the verbal transcriptions of the interviews' records. We have also found new indicators for each category that came out from the analysed contents.

Secondly, we have conceived a model for the e-moderation of the online community that comprises five stages. This e-moderation model was sustained on the e-moderation existing models. Further on, we have created and already published the

Compartilha website, according to parents' and experts' interests and expectations that deal with children and youth with SN.

4. Results and Discussion

4.1 Good Practices on Mutual Support Groups: Results from Interviews with Participants of SN Groups

To better understand how the different stakeholders involved in the SN field interact and what moderation strategies they use, we have collected data on mutual support groups' best practices in the SN field. The interviews' analysis allowed us to reach some results that we consider essential for implementing and improving the *Compartilha* website.
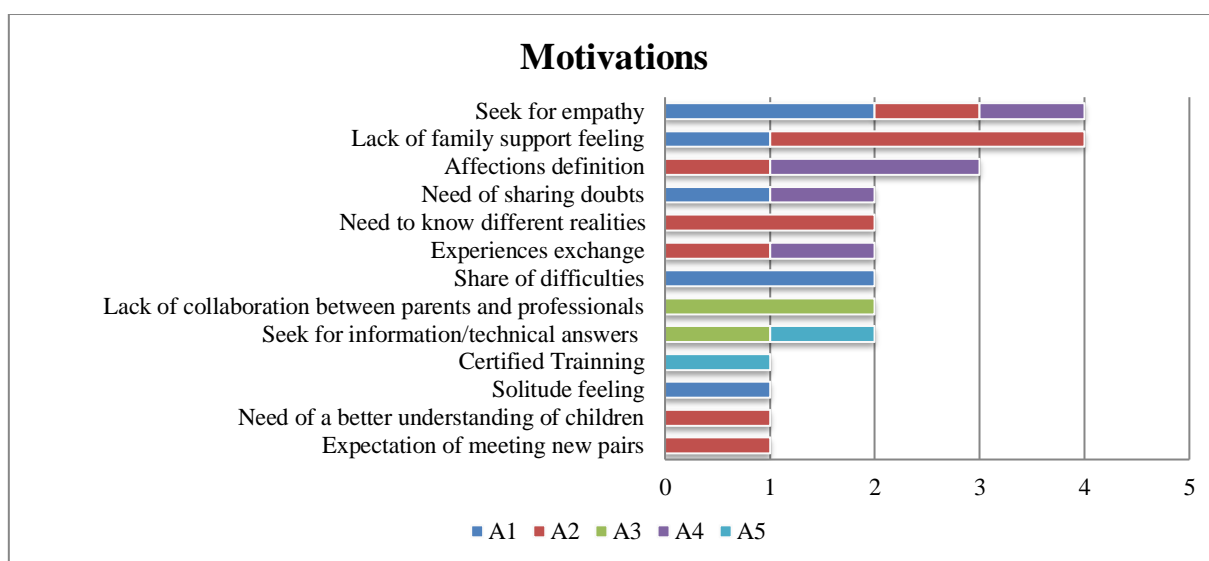
Figure 1: Motivations to participate in mutual support communities in SN field

Regarding the motivations that led persons to participate in mutual support communities in the SN field, 27 text code units were registered. The participants we interviewed pointed out a range of reasons, highlighting the following: seek empathy, lack of family support, and solitude feel, as shown in Figure 1.

The less mentioned topics are related to seeking information and technical answers; we may consider that persons felt motivated to participate because of their need to be part of a group within which they feel understood instead of looking for solutions and strategies. Interviewees with experience in face-to-face groups stated that meetings usually occur monthly or every two weeks to ensure continuous emotional support to parents and discuss topics/subjects defined to ease that process.

As for communication styles, one of the interviewees highlighted the importance of a reflexive profile, while two of them mentioned the sympathetic one. Non-verbal communication of emotions and feelings was mentioned by three of the interviewees. It was one of the most emphasized topics as important as a source of support and empathy among the group members.

Facilitators and e-moderators from face-to-face groups stated that creating a community is a very long and demanding process that requires time and active leadership. Accordingly, to the overall results obtained through the interviews, these participants underlined that if a group works in self-management, without supervision, the community will undoubtedly disappear. The interviewees declared that a well-succeeded community in the SN field calls for the moderator's specific characteristics. Figure 2 shows the results obtained concerning the moderator's characteristics; a total of 34 text code units were categorized, emphasizing characteristics such as the ability to listen, active moderation, and rationality when moderating. Two of the interviewees mentioned that SN groups need a moderator that is not directly or emotionally involved in the matter, thus facilitating emotional progression and finding some responses.
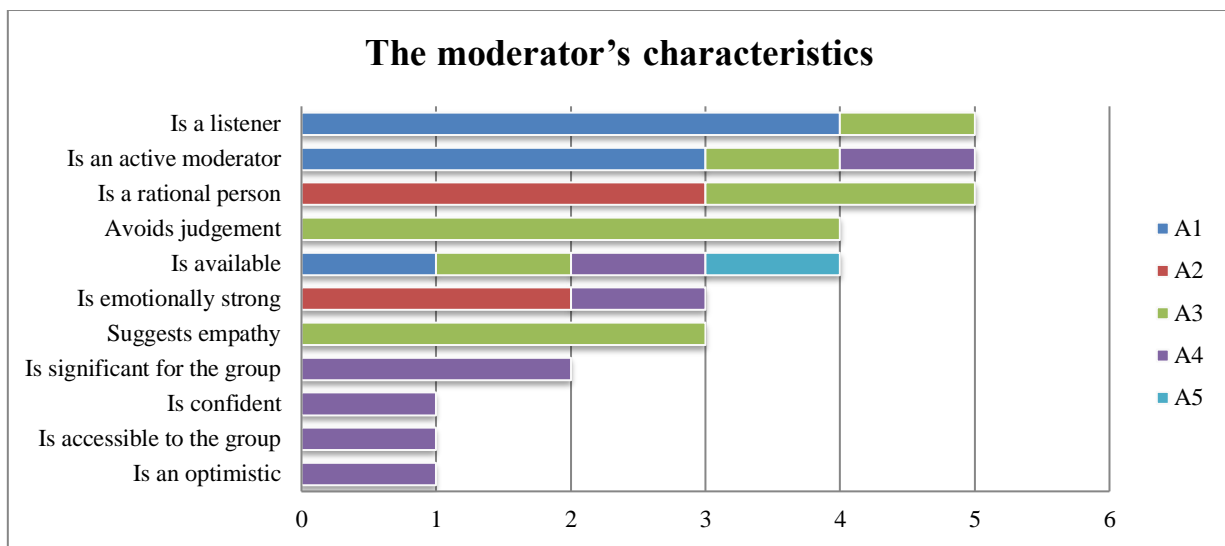
Figure 2: Characteristics of the moderator

The interviewees also brought up a complete sort of moderation strategies (Figure 3) used to boost these communities; from 86 text code units categorized, it is possible to highlight the following: i) building up the spirit of the community; ii) promoting a safety and confidence feeling; iii) putting forward topics/themes for debate.
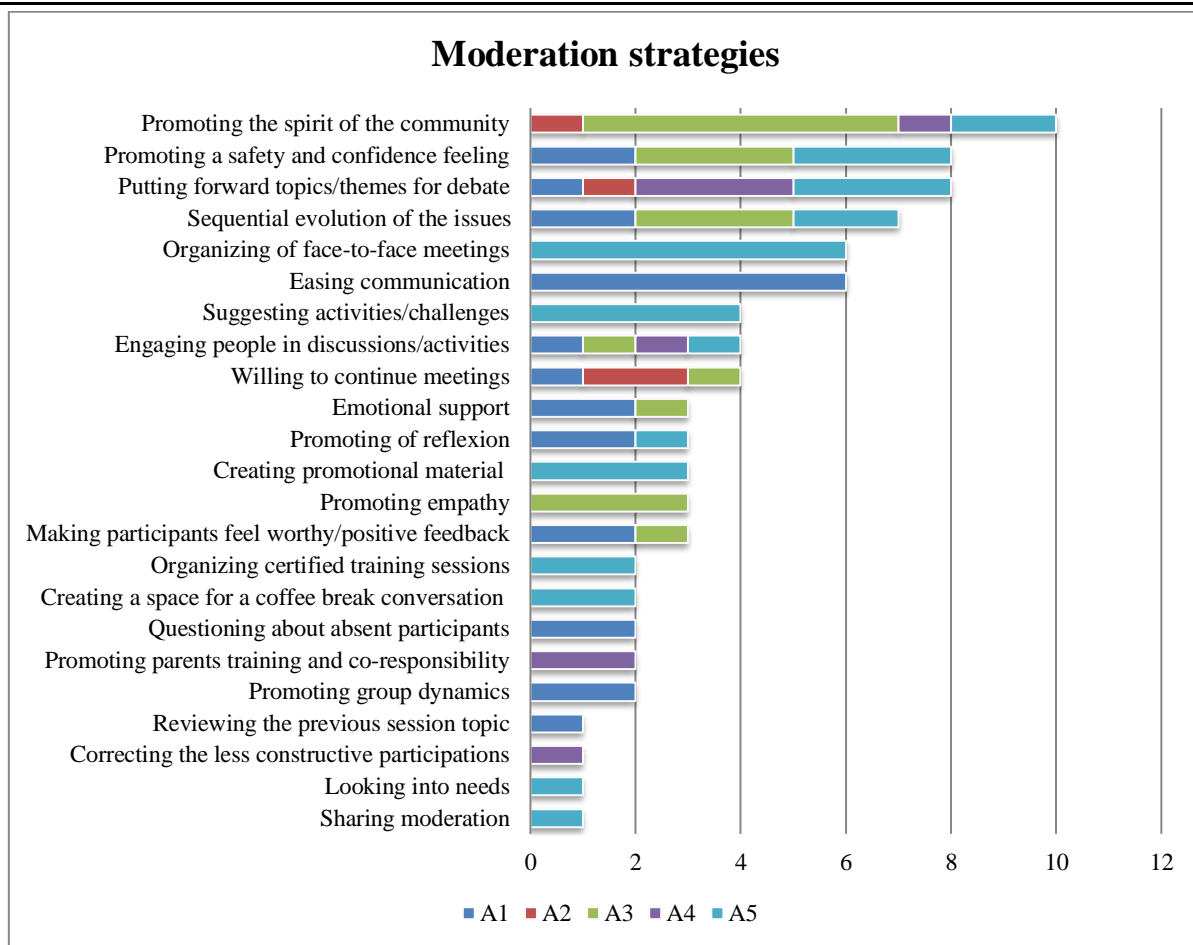
Figure 3: Moderation strategies

E-moderators emphasized that face-to-face meetings were determinant to encourage interaction among the participants of online groups, as they are important to overcome obstacles and prejudgments among unknown participants who may be afraid of exposure and judgment. Under this context, it's worth of mention that the "*sharing of moderation*" strategy - described by many authors, such as Miranda-Pinto (2009) and Nunes (2013) as an important aspect of these communities' sustainability and perhaps as a crucial factor for the longevity of these communities - was pointed out only once.

In what concerns mutual and self-support strategies and dynamics, the search for collaborative solutions, creating a supportive network, and the launch of topics/themes for debate were highlighted, as can be observed in Figure 4.
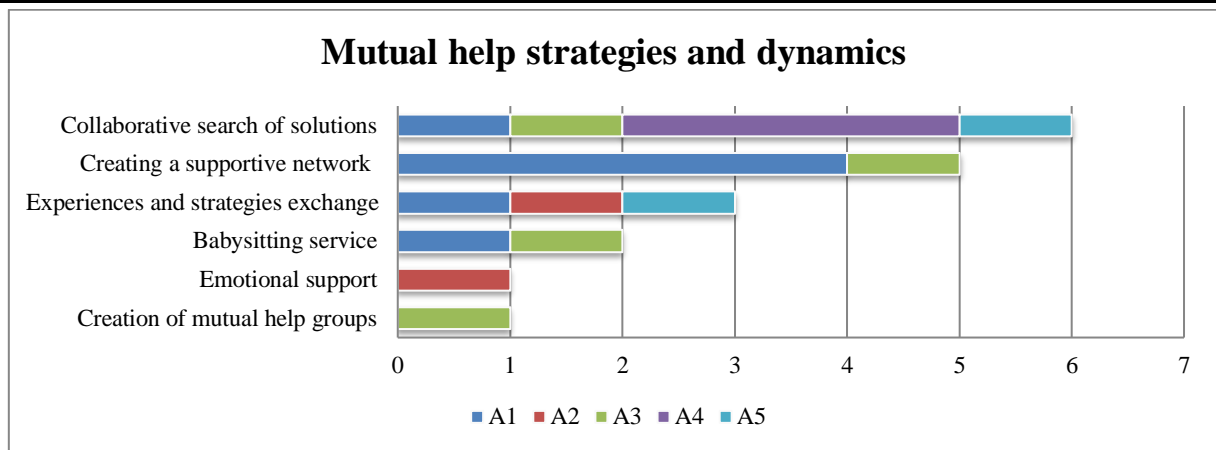
Figure 4: Mutual support strategies and dynamics

Regarding the process of sharing resources (Figure 5), interviewees stated that the progress of a community could help to disseminate materials regarding technical help, law support on tax benefits, or social security support. Participants of face-to-face groups did not report the collaborative creation of materials. Moderators of online communities of practice mentioned some activities to enhance the collaborative creation of materials. Still, stated participants usually got restrained, both while sharing materials and exchanging opinions and knowledge.
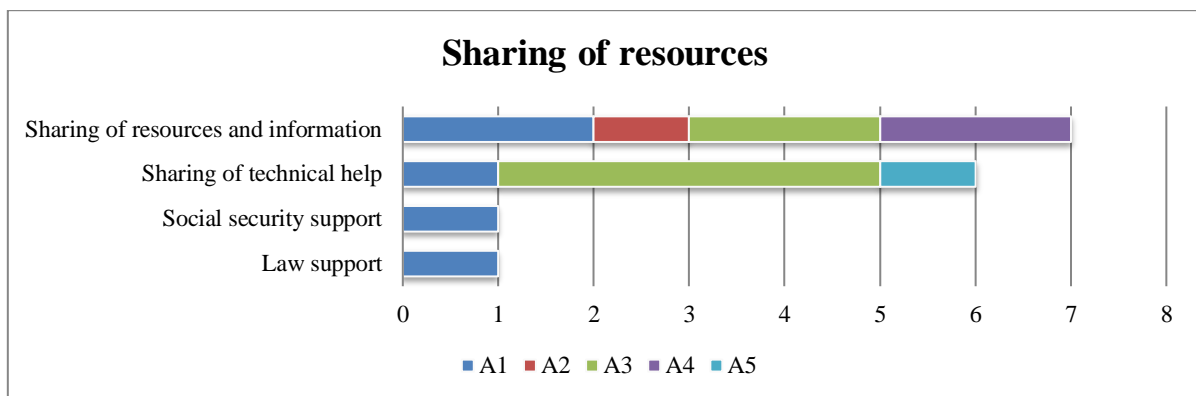
Figure 5: Sharing of resources

The interviewees also reported the problems they usually face while creating and moderating these communities (as can be observed in Figure 6), the lack of leaders, low availability, the overload of information, and the fear when sharing the categories that gather most of the text code units.
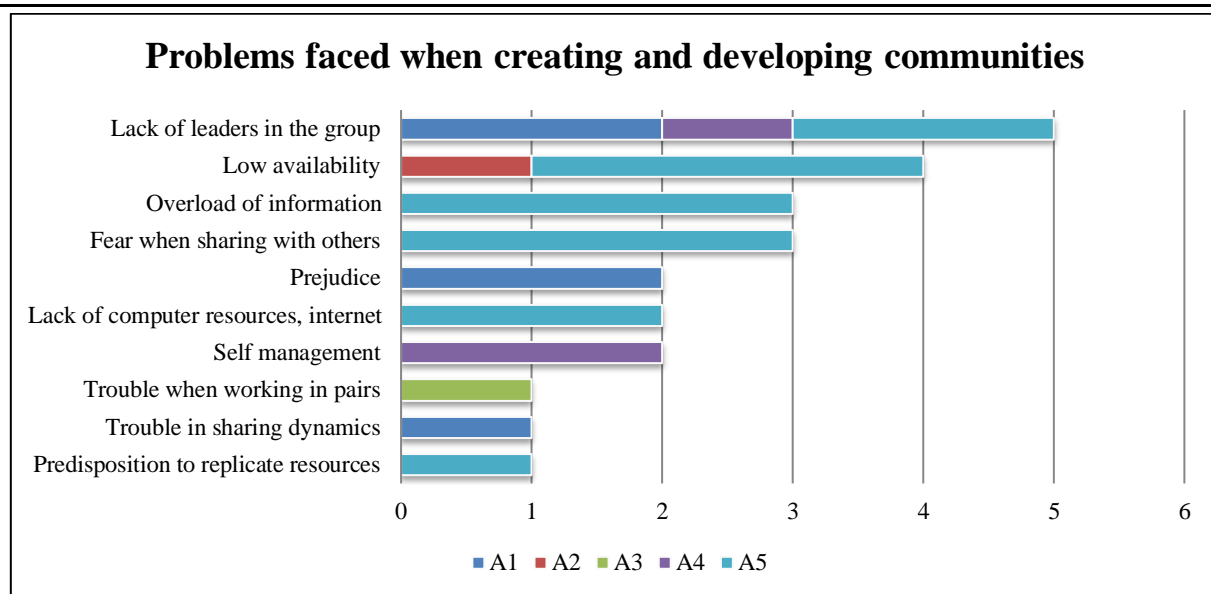
Figure 6: Problems faced when creating and developing communities

In summary, these results allowed us to obtain a very positive general perception of these groups' importance and relevance in the SN field. Throughout the analysis of these interviews, we have noticed the importance given to communities in the SN field as a tool to strengthen persons and empower them as individuals, parents, or professionals. As said by one of the participants: *"(...) It is our particular problem. We have something bonding us that nobody else understands. This is why this empathy we feel for each other, something so special and unique, tying fathers and mothers, cannot be found anywhere else"* (A3). The analysis of these data allowed us to identify and employ those strategies in an online platform.

4.2 E-moderation Model Proposal
Considering the best practices used in face-to-face groups and the results obtained in the interviews and observing the existing e-moderation models for online communities, we have conceived an e-moderation model for the *Compartilha* website.
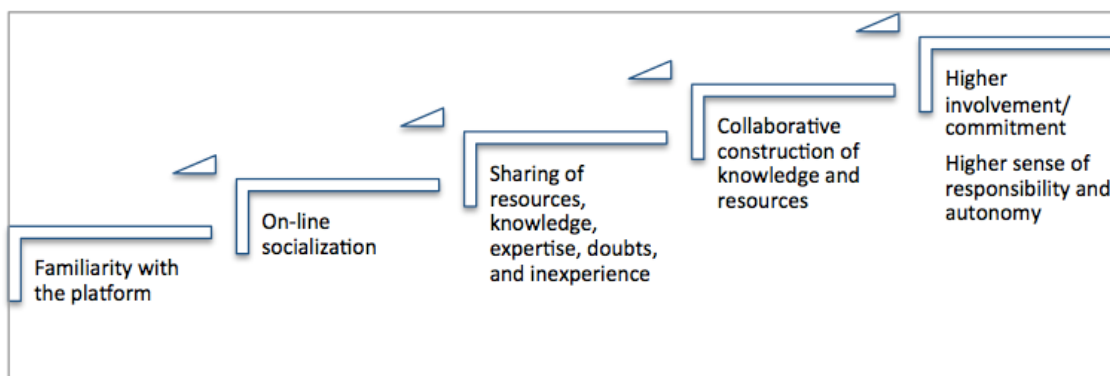

Figure 7: E-moderation model of the website *Compartilha*

This e-moderation model (Figure 7) is based on five steps that aim to engage participants, deepen, and multiply interactions and contribute to a more dynamic community. The proposed model confers the utmost importance to knowledge sharing, considering it a fundamental factor to endorse a social interaction culture that grants privilege to sharing knowledge, experiences, skills, resources, and materials. Our ambition is to assure that *Compartilha* is a learning community in which "sharing" means more than permitting access to an online repository, using strategies that reinforce communication and interaction between the participants, the contents, the peers, and the moderators.

In this model, collaborative mediation based on joint leadership is essential to generate new opportunities for the participants to get involved more actively in structuring their learning, granting the online community's success, as follows in Table 2:

Table 1: E-moderation model *Compartilha* - goals and steps

I. Awareness of the platform
To explain the identity of on online community and organize the learning environment;
To define targets and goals clearly;
To assure access so that all participants can send and receive information requests;
To assure that everyone can use the platform and the communication tools;
To assure ethic compliance;
To build up interpersonal relationships;
To support the development of a friendly, socially, and mutually trusty, positive environment.
II. Online socializing
Be familiar with the group, their expectations, and previous experiences to set up exciting and challenging activities for the community;
Make sure that participants socialize inside the community, having the chance to come up with new ideas and experiences;
Increase the participants' skills of expressing their feelings, opinions, and points of view;
Keep regularity and stimulate the interest of the participants;
Encourage a positive approach to debate topics, even controversial ones;
Make an effort to shorten the social distance among participants;
Get participants ready to learn and discuss ideas in a collaborative manner, based on solid grounds and codes of ethics previously defined.
III. Sharing of resources, knowledge, expertise, doubts and inexperience
Stimulate the process of sharing information/resources;
Facilitate the process of sharing doubts and unknown information;
Generate pleasure in sharing;
Inspire the participants to explore issues that lead to reflexion;
Encourage a more committed interaction;
Promote cooperation among participants when carrying out activities.
IV. Collaborative construction of knowledge and resources
Support the development of reflexion and collaborative skills in the process of knowledge production;
Enhance that participants feel responsible and in charge of their learning process;
Draw attention to creativity and collaborative learning;
Facilitate the growth of groups of interest for a particular subject being discussed and treated;

Stimulate shared leadership when negotiating multiple speeches, interpretations, and knowledge depiction.
V. Higher involvement, higher responsibility, higher autonomy
Promote the autonomy of the group;
Motivate responsibility when performing tasks;
Promote self-assessment/reflexion;
Stimulate ICT self-learning;
Stimulate the implementation of e-moderation strategies by the group members;
Lead each participant to think about his/her own knowledge;
Induce the autonomy and the strength of the group.

Consequently, and trying to enhance collaboration and cooperation among the online learning community participants, we have defined the main goals of each of the five steps of the model. That way, this model intends to improve special education practices in Portugal by reducing the different educational agents' fragmented performance, uniting and enabling them, and endorsing a more pro-active attitude to empower and enable families to their children's education.

5. Recommendations

This e-moderation model proposal can support creating online learning environments, improving the information sharing process between the participants, and developing a more flexible, dynamic, and self-sustainable community.

6. Conclusion

The moderation and management of learning processes in online environments are of most importance. The e-moderation of online learning communities is an especially relevant issue when considering the short time these communities' life cycles usually have. Emotional, personal, and social factors are features of significant relevance for developing and maintaining online communities, especially in the SN field, observing this subject's psychosocial and educational complexity. In this paper, besides considering these factors, we have also tried to understand how the best practices used in face-to-face communities in the context of SN can be mapped to an online learning community. Moreover, we made a literature review on e-moderation models and presented the interviews we conducted to better understand the e-moderation processes.

Considering the obtained results was possible to propose a five steps model that seeks new e-moderation strategies for online platforms that promote empathy, interaction, collaboration, sharing, and emotional support among its participants. This model allows the production of knowledge and the strengthening of the community, emphasizing the importance of emotional and social bonds for the endorsement of engagement, responsibility, and autonomy of the participants.

Acknowledgements

About the Authors

Oksana Tymoshchuk is graduated in Universal History and Practical Psychology, detains a Master in Educational Sciences/Special Education and holds a PhD in Multimedia in Education, University of Aveiro. Currently post graduated researcher in project CeNTER– Community-led Networks for Territorial Innovation. Her present research interests are related to Territorial Innovation Systems, digital inclusion, media for all and communication technologies to support citizens with special needs.

Teresa Margarida Sousa, PhD in Education, Teaching Methodology and Curriculum Development, by the University of Aveiro, graduated in Special Education and Rehabilitation and holds a Master's degree in Rehabilitation of Speech and Language Disorders. She develops her clinical practice with children with developmental disorders. Her present research interests are related to communication and education, online learning environments to promote oral and written language to support people with special needs.

Ana Margarida Almeida holds a PhD in Communication Sciences and Technologies and has been developing research activities related to 'ICT and special needs, 'digital inclusion', 'media for all', 'communication and health' and 'health education/promotion through ICT'. She is an Assistant Professor and lectures in undergraduate, graduate and doctoral courses ('New Communication Technologies degree', 'Multimedia Communications Master', 'Multimedia and Education PhD Program' and 'Information and Communication in Digital Platforms PhD Program'). She has developed several supervising activities of MSc and PhD students, highly related to her main research interests and she has been involved in different research projects and scientific initiatives.

Paula Santos - PhD in Educational Sciences/Early Intervention (EI), Assistant Professor at the Department of Education, University of Aveiro (UA). Director of the Master on Educational Sciences, coordinates its Special Education area, and the Diversity and Special Education area, in the Education Doctoral Program. She worked in several Special Education/Inclusion teams, from 1984 to 1999. From 1989 to 2011 worked as home visitor, trainer, supervisor and coordinator in Coimbra and Aveiro EI Structures, here representing UA. Her interests focus on research and training in Special Education/Inclusion, Early Intervention, Experiential Approach and binomial Quality-Inclusion in Education.

Conflict of Interest Statement
The authors declare that there are no conflicts of interest.

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