

Chatbot: digital communication and religion after the pandemic in Latin America

Chatbot: comunicación digital y religiosidad tras la pandemia en Latinoamérica

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Abstract

The intensified social isolation after March 2020, Covid-19, showed the need to think about a new agenda of activities in which digital communication technologies are used to support the shortening of distances and revisit new possibilities of interaction. In this sense, this qualitative article presents a study carried out on the use of Chatbots for communication continuity between a specific community: the religious one. This audience was chosen to exemplify the relevance of the theme on how to overcome, at present, paradigms that praise the face-to-face as the only interactional source. The methodological design was structured in two phases (i) bibliographic review and (ii) application of a questionnaire to participants who are in geographic areas of eight countries Brazil, Uruguay, Argentina, Paraguay, Chile, Peru, Bolivia, and Ecuador. The results showed that the use of Chatbots took place through - communication technology for emotional support, the Chatbot in community contexts, such as the one explained here, gave the security of “belonging” to “being” and, despite the isolation, not be alone; and - use of communication technology that can enable individuals from all walks of life to request support in relation to current affairs, local issues, and personal circumstances. These bases highlighted the following categories of discussion to think about a new agenda about digital in times of humanitarian crisis.

Keywords

Communication, online interaction, religiosity, perspectives, pandemic times, digital culture, access, Latin America.

Resumen

El aislamiento social que se agravó después de marzo de 2020, por Covid-19, puso en evidencia la necesidad de pensar en una nueva agenda que utilice las tecnologías digitales de la comunicación para apoyar el acortamiento de distancias para tener nuevas posibilidades de interacción. En este sentido, este artículo cualitativo presenta un estudio realizado sobre el uso de chatbots para la continuidad de la comunicación entre una comunidad específica: la comunidad religiosa. Este público fue elegido para ejemplificar la relevancia del tema sobre cómo superar, en la actualidad, paradigmas que permitan estar presente como único método interaccional. El diseño metodológico se estructuró en dos fases (i) revisión bibliográfica y (ii) aplicación de un cuestionario a participantes ubicados en áreas geográficas de ocho países Brasil, Uruguay, Argentina, Paraguay, Chile, Perú, Bolivia y Ecuador. Los resultados muestran que el uso de los chatbots se dio a través de tecnologías digitales como soporte de pertenencia para una nueva agenda de comunicación y que, en contextos comunitarios, enfatiza la seguridad de “pertenecer” y, a pesar del aislamiento, no estar solo, permitiendo que personas de todos los ámbitos soliciten apoyo en relación con asuntos de actualidad, problemas locales y circunstancias personales. Estas bases destacaron las siguientes categorías de discusión para pensar sobre lo digital en tiempos de crisis humanitaria.

Palabras clave

Comunicación, interacción en línea, religiosidad, perspectivas, tiempos de pandemia, cultura digital, acceso, América Latina.

Introduction

The first cases of people infected by the coronavirus (SARS-CoV-2) appeared in December 2019 in Wuhan, Hubei province, China, and spread rapidly worldwide, initiating the Covid-19 pandemic in Latin America and the United States with great impact on the lifestyles of the population in March 2020. Due to the high risk of contagion, the overload of health systems and the high number of deaths, the population had to reorganize routines, keep their social well-being at a distance, use protective masks, among other strategies to face and survive the pandemic (PAHO, 2020; Scorsolini-Comin *et al.*, 2020)

In Brazil, for example, the high rate of infections and deaths made the country as the epicenter of the pandemic (Hallal, 2021) and data from the Ministry of Health (Brazil, 2022) suggested that by June 2022, some 31 445 137 cases of coronavirus infection and some 668 000 deaths caused by the disease had already been reported. The Pan-American Health Organization (PAHO), along with the World Health Organization (WHO), reported that there were about 14.9 million deaths directly or indirectly associated with the pandemic (PAHO, 2022a). As a result, many families around the world lost loved ones, got unemployed, and suffered from overcrowded health systems.

In Latin America and the Caribbean, the ongoing economic crisis worsened, causing recession in some countries (OECD, 2020), citizens had to deal with a lack of healthcare and hospitalization vacancies, there was a collapse in the health system (Orellana *et al.*, 2020; Hallal, 2021, 2020; Hallal, 2021), showing that in vulnerable regions, compared to regions of greater purchasing power, “Covid-19 pandemic is exposing and intensifying health inequities, especially in the poorest regions” (Orellana *et al.*, 2021, p. 12).

Faced with such a complex and uncertain scenario, people started looking for alternatives and efficient responses to face the pandemic and, to some extent, alleviate suffering emotional and mental health aspects not to mention both, the physical consequences of coronavirus infection such as: fever, cough, hypoxia, conditions of social isolation can also cause other symptoms such as: fear, anxiety, loneliness, anger, depression, insomnia, and the side effects of ingested drugs (Scorsolini-Comin *et al.*, 2020; PAHO, 2022b).

Health professionals were more sensitive to physical and mental health problems caused by Covid-19, due to overwork, exposure to the virus and the risk of transmitting the disease to friends and family, and the experience of

coping with the pandemic, treating patients with Covid-19 and caring for patients' families also led to come under mental health problems, such as anxiety, stress, depression, among others (Kang, 2020; Humerez *et al.*, 2020).

Consequently, there was a significant increase in searches for spiritual support and religion; according to data from Google's trending search site, the search term spirituality increased during the pandemic, especially in March 2020 when it started, which can be justified by the stressors already mentioned, which intensified due to the pandemic.

Note the data in Figure 1:

Figure 1

Google trends search data for the terms: spirituality and coronavirus site google trends



Note <https://trends.google.com.br>, 2022

Some reports also noted how the search for spiritual guidance and religion grew dramatically during the pandemic, pointing out to the relevance of spirituality in helping people cope with the health crisis (Madureira, 2021; Monteiro, 2020). Thus, religions have had to reinvent themselves with ser-

vices, masses and meditations broadcast on the internet and shared through social networks, facilitating citizen access and the dissemination of spiritual messages to a greater number of viewers and listeners (Yano, 2020).

Hence, the aim of this research is to investigate alternatives of digital communication as well as the use of tools that enhance the relationship considered so traditional in Latin American society; religion-communication.

Considering the array of technological resources, this study is in accordance with Nißen *et al.* (2022) when saying that chatbots are considered social actors, and since time is an essential component of social interactions, it draws attention to the temporal aspects of relationships. In the near future, according to Liebrecht *et al.* (2021) examining the contingency of a chatbot's design choices will be of great benefit.

Materials and methods

The researchers defined qualitatively two methodological phases for this study: (i) literature review involving the topic: education and spirituality; post Covid-19 pandemic religiosity; (ii) collection and analysis of empirical data on how the Seventh-day Adventist Church (SDA) community is using digital communication and information technologies.

The institution was chosen for using chatbots to keep in contact with its members, in a period of pandemic having been consolidated as a constant activity.

The SAD is organized through four levels from the individual member to the worldwide organization, namely: the Local Church, Association or Mission, Union, General Conference, a section of which is the Division. In the case of South America, eight countries (Brazil, Uruguay, Argentina, Paraguay, Chile, Peru, Bolivia and Ecuador) are part of the South American Division.

Thus, there is a department of digital strategies in South America for the upkeep of social networks and for the production and dissemination of content for its members through the internet and applications (e.g., <https://feliz-7play.com/es>), finding documentaries, series, movies for members of all ages.

The “Novo Tempo” television and radio channels are directly linked to the South American Division, with programming in Portuguese and Spanish, twenty-four/seven. The radio operates 19 stations with a listening potential of almost 90 million tuners. The television channel is available on all subscription operators at no additional charge and also on YouTube.

Through these resources, tools to learn more about the Bible are made available to the programming on the channel and the radio studios.

The SAD uses communication and interaction technologies to seek content for its community. During the pandemic period, having a structure for this was essential to meet the needs and maintain the relationship with the church.

For that purpose, a questionnaire was prepared with questions involving the “religion-communication-technology” relationship, with the participation of 12 executive members, chosen because they were located in different countries belonging to Latin America: Brazil, Uruguay, Argentina, Paraguay, Chile, Peru, Bolivia and Ecuador.

The guiding questions, prior to their application, were validated by three specialists: one from Communication and Expression and two members of SAD, being structured on the following basis: How did SAD members search for ways to maintain their spiritual practices during the pandemic?

Results

Albeit religion and spirituality tend to be associated, it is no trifling to understand that the concepts for both are different. According to Curcio (2018), spirituality refers to the human essence, relating to their beliefs, emotions, subjectivity, and relationships of individuals with something considered divine and sacred.

This research is then aligned with Adikari *et al.* (2021) when stating that it is necessary to analyze artificial intelligence as a source of help to contribute in the web to encompass expressions reflecting an infinity of personalities and behaviors, focusing on the emotions of those seeking this activity, to overcome the human-machine relationship, providing more solid foundations to not be alone, despite the social distance.

Religion and spirituality

According to Koenig (2012), spirituality is defined, felt or based on the human being's pursuit of answers about the meaning of life, and this term admits different interpretations, hindering its understanding, and emphasizing that “the meaning of the term spirituality has recently expanded to include positive psychological concepts such as meaning and purpose, con-

nection, mindfulness, personal wellbeing and happiness” (Koenig, 2012, p. 10). This author also claims that the language of spirituality is not usually associated with religion or religiosity, but is more connected to the subjectivity of the individual and his or her pursuit of self-realization, influencing his or her health and quality of life. For Frankl (1991; 1994), spirituality is also related to the pursuit of the meaning of life and its scope does not depend on religions, religiosity or specific denominations, but both contribute to the achievement of these aims. It is worth adding that in this context, Silva and Silva (2014) also include values such as:

Love, hope, joy, forgiveness and compassion being the core of spirituality. It dwells in us, our lives, our world and our sense of humanity, friendship and family. Spirituality can be found in any human social action; it is inherent to humankind and it is rooted in it since humanity began. (Silva and Silva, 2014, p. 212)

Religiosity and religion are both a social construction, set up by the man and mainly involve practices, rituals and beliefs related to a denomination or religious group, being many times represented by the image or ideologies of a superior being, a God or gods and nourished by a religion, with manuals, convictions and specific rules of behavior, forming social groups, with periodic meetings like cults, sessions, masses, meditations (Silva and Silva, 2014).

For Koenig (2012), religiosity is usually lived through worship, and seeks representations of idols or of a God, a superior being. It is also frequently associated with specific beliefs about life, death and norms of behavior in social groups. In fact, although it is not the main objective, spirituality can also be present in these practices, liturgies, worship rituals and in the religious experiences of man (Silva and Silva, 2014), since, for Curcio and Almeida (2019), both, spirituality and religiosity would have faith as a fundamental element, and further states that in:

The query of what gives meaning to life, love, faith, God, family, friends, work, culture or health were the elements mentioned. It was noted that many participants used the word faith; according to a model proposed by Newman (2004), spirituality and religion are a function of faith, requiring faith as a foundation, and being the guiding principle because individuals would be religious or spiritualized. (Curcio and Almeida, 2019, p. 290)

Thus, faith would be an essential element contributing to an alignment between religiosity and spirituality, complementing them and being essential for individuals to find meaning in their lives and have hope, even in the midst of difficulties and be unconditional, to strengthen people and their spirituality (Silva and Silva, 2014).

Yet, emphasizing the possible benefits of religiosity and spirituality, the study conducted by Forti *et al.* (2018) highlights spirituality promotes a better quality of life, being relevant as an alternative strategy in the treatment and prevention of diseases, associated with conventional treatments. Melo *et al.* (2015) conducted a study with the aim of identifying a correlation among spirituality, religiosity and quality of life, resulting that it was possible to detect a positive correlation through a systematic review among these terms in most of the selected articles, as well as:

Religiosity/spirituality appears as one of the strategies used to cope with adverse situations, such as physical illness, mental disorders or bereavement; therefore, it appears as an aid for coping, comfort and well-being, a defense mechanism, or even resignation. Moreover, it is a great tool of social support for these individuals. From a broader phenomenon view, spirituality appears with very significant results in the studies, as a way for individuals to resignify their misfortunes and rearrange their experiences. Even in individuals who do not adhere to any religion, spirituality plays an important role, linked to significant existential issues. (Melo *et al.*, 2015, p. 459)

The study also highlights that only two selected articles showed a negative correlation between the terms, emphasizing religiosity and religious behavior as harmful, since individuals are guided to follow certain religions, using faith as a means to achieve goals, specifically wealth ones, and when they do not achieve them, they feel frustrated.

Another factor presented concerns negative feelings arising from excessive rules or inhibition to manage feelings, and probably contributing to deteriorate the quality of life (Melo *et al.*, 2015). It is worth mentioning that other studies demonstrate that spirituality is related to quality of life, promoting positive results in the treatment and prevention of depression as well as other diseases, and in coping with stressful situations (Forti *et al.*, 2018; Panzini *et al.*, 2010; Koenig *et al.*, 1998; Koenig *et al.*, 2001).

Chatbot and Church: support in pandemic times

For Misischia *et al.* (2022), the functions related to chatbots are interaction, entertainment, problem solving, fashion, and personalization. Their influence might be considered positive in-service quality, constituting the functional objective of chatbots, as well as the potential in customer service.

Zhou *et al.* (2022) claim that interactions between humans and chatbots are gradually becoming part of our daily social life. Thus, seeing how human-chatbot interactions occur, compared to human-human interactions and how they influence individual morality is necessary.

Since religiosity could be considered as a support in adverse situations, it is necessary to consider what resources may be needed for this. The use of chatbots is highlighted, which according to Adamopoulou and Moussiades (2020) are tools evolving rapidly in several fields in recent years, including marketing, support systems, education, health, cultural heritage and entertainment.

From this evolution, it has been seen the motivations driving its use and its impact on different social interactions, including in churches, as will be seen in this study.

As for Dahiya (2017), a chatbot is a communication robot, using intelligence to mimic human conversation and assisting the user by answering questions, with the benefits being driven to its wide adoption to provide virtual assistance.

Chatbots use methods and algorithms from two domains of artificial intelligence: natural language, processing and machine learning (Caldarini *et al.*, 2022).

Analyzing the aforementioned institution and based on chatbot and artificial intelligence, a digital communication tool called “Hope” was developed to maintain and facilitate communication with the faithful and stakeholders, during the Covid-19 pandemic.

This tool was developed by the Novo Tempo television channel, belonging to SAD, and is one of the resources adopted by the denomination mentioned to help students of the Digital Bible School, being a vehicle for religious instruction and spiritual support, where those interested can access Bible studies, receive guidance and personalized attention, resolve doubts about the Bible or chat with a member of the team.

The database is hosted on MONGODB, the template was hosted on Amazon and currently migrated to its own platform, with these features: platforms: WhatsApp, Telegram, Messenger, with 96 % through WhatsApp, remarking that when started, in 2017, Messenger was stronger.

The purpose of the chatbot is to facilitate access to educational content and biblical lessons, support, active listening, spiritual guidance, and also make SAD members and managers aware of the importance of the internet and digital resources to teach and disseminate relevant content.

The aims of the digital Bible school and the chatbot “Esperança” are: to study the Bible through the internet, promote the spiritual growth of students, disseminate educational content, based on biblical principles with the support of digital resources, offer spiritual support and messages of hope in a receptive, empathetic and non-judgmental way (Tonetti, 2021).

This chatbot uses artificial intelligence technology and can be accessed through a link available on websites of the aforementioned denomination and on the “Novo Tempo” network, directing to messaging applications and interacting with the user, offering spiritual guidance, counseling and Bible studies, being a kind of virtual instructor or teacher. According to Fernandes (2019), there are three basic access links, as shown in Table 1.

Table 1
“Esperança” chatbot access links and features

link 1: adv.st/ queroestudar	This is a link for those wanting to study the Bible individually. By accessing this link, the interested user will be directed to the conversation in the application or in the web version of WhatsApp. From then on, you just have to follow the steps the robot indicates.
link 2: adv.st/ darestudobiblico	This is a link for anyone wanting to study the Bible with an interested person. By accessing this link, you will be addressed to the conversation in the app or the web version of WhatsApp. As with the previous link, just follow the steps as directed by the bot, which will guide you to create a group with the other person.
link 3: adv.st/ queroconversar	This is a link for those wanting to receive service, asking questions or talking to the Digital Bible School team. By accessing the link and sending a “Hello”, the chatbot queue the interested to be served. In this mode, the service is provided by a person not by the robot.

Note. Fernandes (2019, n.p.)

When accessing the link, the chatbot interacts with the user, through objective questions and answers, leading the user to the desired content. About eleven studies in Portuguese and eight in Spanish are offered, dealing with relevant topics such as: family, physical and emotional health, coping with grief, adolescence, sexuality, biblical archeology, among others.

Technology has now been improved and provides content related to the topic under study to broaden the student's understanding, making available video and text materials, based on a search in the collection of the official websites of the SAD and Novo Tempo. Communication network.

It is also worth mentioning in this context that the Chatbot "Esperança" has the support of a team of professionals to provide interested users personalized and humanized attention in the aforementioned digital resource.

It is an artificial but not necessarily non-humanized system because apart from the team responding messages and offering personalized advice, the technology itself is also intended to be a tool for missionary engagement (Tonetti, 2021, n. p.).

Furthermore, there was a 271 % increase in the number of digital Bible school students in 2020 when the pandemic began in Brazil, generating greater searches by individuals generally for religions and spirituality.

According to Castro (2020), it was programmed to interact in two languages: Portuguese and Spanish, and by November of that year it had already served more than 100,000 students, in more than 70 countries, who studied the Bible and sought counseling and spiritual guidance, with an average of 140,000 messages sent daily. The aforementioned author states that hope is a technology:

To simultaneously study the Bible with thousands of people and groups. Basically, the work between our team and "Esperança" is divided as follows: she takes care of mechanical and systematized issues, while our assistants are responsible for what is human and requires special care, being all quite simple and natural; while the person studies the Bible with "Esperança", he or she can be advised and ask questions with our team - and all within the same chat, without having to connect to several channels of care. (Castro, 2020, n.p.)

Consequently, the perception about the use of this tool in times of pandemic was sought, as shown in Figures 2 to 5, which are with captions in Portuguese/Spanish, as the original sent by the language of the participants.

The first aspect addressed to the search for members to maintain their spiritual practices during the period of social isolation, as shown in Figure 2:

Figure 2

Maintenance of spiritual practices during the pandemic

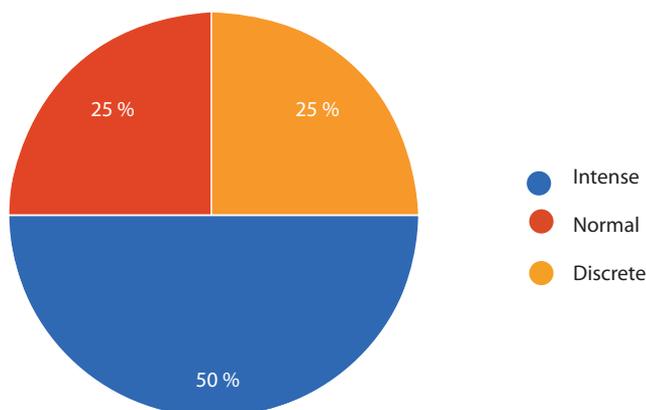


Figure 2 shows that half of the participants understand the search has intensified and no one considers it to be null.

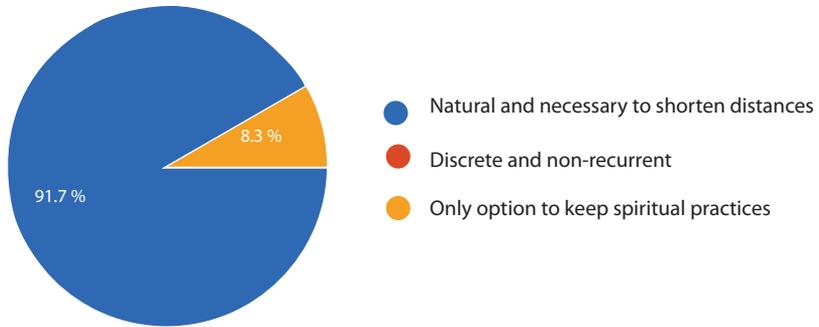
Up to June 2022, 181 638 people studied with “Esperança”, with 11 lessons available in Portuguese and eight in Spanish, without mentioning other being for special events such as: Easter, Youth Week and launches of Feliz-7Play or NTPlay. The daily messages number is around 150 000.

It is important to mention that there are people asking for attention because of emotional problems, appointments last only one day and others last more than two years.

The number of cell phones making the hope work varies depending on the WhatsApp policies and other messaging apps, as they limit the number of students per cell phone number and the number of messages sent. At the peak of the pandemic, 2020, around 360 000 messages were sent per day, with an average of 1000 new students daily, having to adapt the infrastructure to the demand.

The second point addressed in how online communication tools were used during the pandemic, as shown in Figure 3:

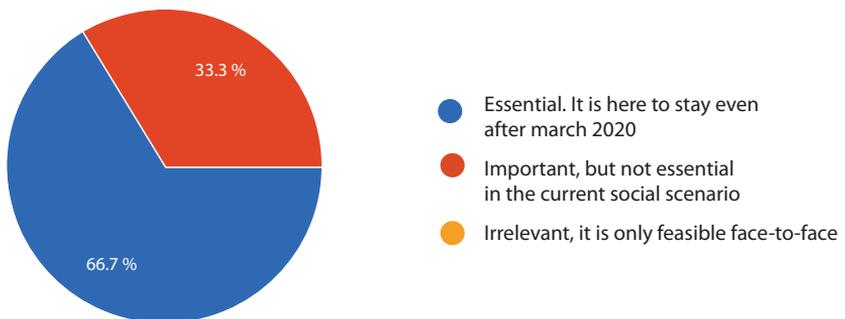
Figure 3
How digital tools were used



The geographical distance required by humanitarian health issues was the main obstacle to overcome in terms of the practices at issue. For 91.7 % of participants, digital communication tools were the points of support for this overcoming, highlighting that their use occurred naturally and necessarily for the given situation. And, although 8.3 % highlighted that it was the only option for participation, no one showed that this was discouraging.

These responses support the challenges of the next question about how they view online practices in Biblical Education and Religious Communication strategies, as shown in Figure 4.

Figure 4
Importance of online practices



33.3 % of the respondents consider online practices to be important for the scenario, but not fundamental as opposed to 66.7 %, considering them as actions that will remain in the daily life of Bible study.

Delving into the “Esperança” chatbot, the question arising is who should support the development, besides the geographic shortening, so the tool can be used in a meaningful way to the principles of this community, as shown in Figure 5.

Figure 5

Meaningful listening to support chatbot development

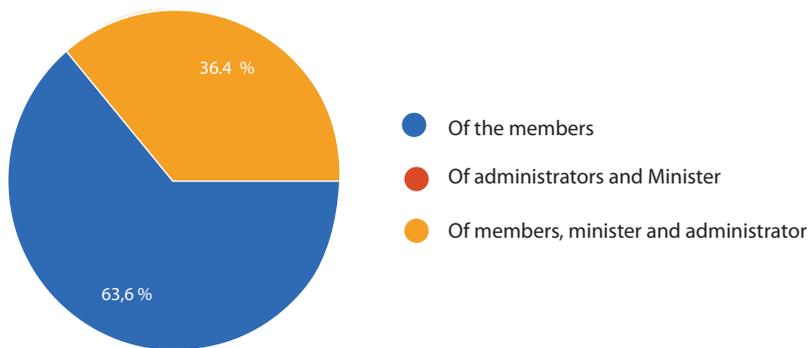


Figure 5 shows that 100 % of participants agree that church members could/should be listened to on important/relevant bases that the chatbot should address. Nevertheless, 36.4 % of these believe that all members should be involved, including pastors and administrators.

Regarding the impact of using a chatbot for Bible studies, the participants of this study highlighted the strengths because, despite the massive use, the agility in the service, the scope, the speed of the answers, makes the chatbot a tool that breaks through to counterbalance the effects of the pandemic and thus the interested individuals assume the message in a unique, innovative way, helping in the activity of preaching, motivating the members to study anywhere, with anyone, giving the perception of a reliable and encouraging tool.

Thus, the responses given help enable coordinated action, providing information and facilitating adaptive behavioral responses, along with the studies of Lange *et al.* (2022).

Conclusions and discussion

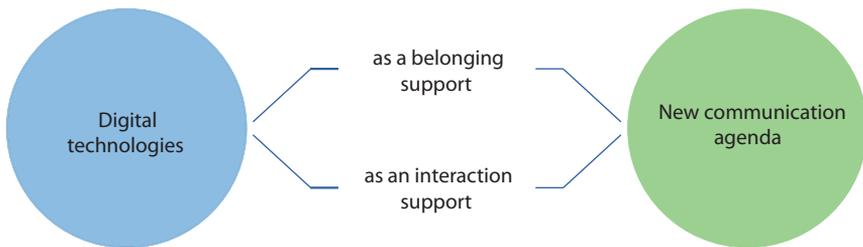
Based on the results of the review and the questionnaire, it is worth highlighting that the participants believe that artificial intelligence is essential and should remain on the innovation agenda in this environment because in times of crisis, it generated the idea of belonging, action. Indeed, mobile media can keep people connected to the church, to the pastoral, without the possibility of returning; work is no longer done without technologies that give the feeling of being present.

From this point of view, digital media, in addition to shortening distances, can embrace the understanding of a paradigm shift in the conception of the relationship between people, a new agenda for the use of the digital, especially when the educational scenario is religious, historically constituted by presence.

Thus, the data presented highlight the following categories of discussion to further think a new digital agenda in times of humanitarian crisis on the technology-church connection:

Figure 1

Technologies as support for a new communication agenda



Digital technologies as a support of belonging for a new communication agenda

Through teaching community contexts, such as the one explained, it is observed that it highlights or gives the security of “belonging” and “being together”, not being alone. Despite the physical isolation, it even plays an important role in the coordination of social interaction.

Using this means of communication causes critical processes to be checked, as it expands the evidence and points to the symbolic bases of a person. This perception of emotion is related in contextual information.

Additionally, having a return of the expected draws consequential and contextualized inferences from the perceived emotions in the future. However, through conversational ones using artificial intelligence techniques to enhance and personalize automation in teaching, it may be possible to identify pedagogical agent bases.

Not only does a chatbot design may be important to develop engaging, useful and valuable pedagogical agents, but also to understand emotional, cognitive and social educational concerns, grasping that users interact for various purposes and motivations, and for different periods of time.

Digital technologies as a support for interaction

The social network allows people of different genders, cities, countries, to ask for support in relation to current issues, local problems and personal circumstances. Thus, it is possible to put on the agenda its direct effect of communication style on the attitude and quality of interaction through (digital) social presence.

Thus, this (in)formal communication style promotes a higher perceived social presence influencing positively on the quality of interaction and attitude mentioned for religious practices, through familiarity and perceptions of appropriateness, indicating that participants assign different roles as communication partners.

In this regard, despite understanding there is still a long way to go, such a paradigmatic break also helped to understand the challenge for institutions in different social settings and to bring people closer to their environment with whom wanting to be and stay.

In this perspective, artificial intelligence provides reflection on new communication experiences, new solutions to real problems, transforming the way the institution interacts to facilitate the scope of proposed activities.

Altogether, four levels are seen from the individual member to the global organization: the local church, an organized and united body of individual members; the local association or Mission, an organized and united body of churches of a state, province or territory; the union, a united body

of associations, missions or fields within a larger territory, highlighted here by South America.

The digital resource is an efficient tool for the digital Bible school of communication, facilitating the dissemination of educational content and communication with people interested in spiritual matters, religiosity and counseling on the Internet, reaching several countries with an accessible, dialogic language, in a practical, safe, simple and agile way.

However, what is mentioned here is the support for self-improvement, noting that there are several dimensions to gain confidence, such as mentoring, assistance, administration, evaluation and generation of results.

Additionally, it is analyzed a new way of seeing the habits of action, the meaning of relationships, justifying the organization of new habits, new measures of doubts and answers, the challenge at this point is not to lose the essence of mentoring, of support.

Ultimately, users understand that digital media are the meeting point in times of crisis and optimize the time, the waiting time, the time to meet needs, and even emotional ones.

It is possible to offer personalized experiences with intelligent tutoring systems to meet individual and collective needs and, if possible, they can personalize the action plan in/with the institution. In this perspective of online participation, members can create project groups to exchange information, assignments, presentations, providing a viable environment for learning.

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