

Collaborative convergence: finding the language for trans-disciplinary communication to occur

Convergência colaborativa: encontrar a linguagem para que a comunicação transdisciplinar ocorra

Convergencia colaborativa: encontrar el lenguaje para que se produzca la comunicación transdisciplinar

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ABSTRACT

The proper study of communication from existing models opens the doors to scientific research that allows exploring language and coding as an integral part of effective communication to generate new models that include Trans-Disciplinary Collaboration. The authors analyze the communication factors to describe the application of Trans-Disciplinary Communication.

This paper aims to define communication processes and their relationship with language, considering their impact on trans-disciplinary collaboration and innovation.

After conducting a systematic literature review, the article explored the concepts of communication, functions, language, and Trans-Disciplinary Communication. This led to its application in the convergence research approach presented in the Collaborative Convergence Pyramid.

Keywords: scenario, collaboration, communication, trans-disciplinary communication (TDC), idiolect, factors, convergence, SDG4 education.

RESUMO

O estudo adequado da comunicação a partir dos modelos existentes abre as portas para a pesquisa científica que permite explorar a linguagem e a codificação como parte integrante da comunicação eficaz para gerar novos modelos que incluam a Colaboração Transdisciplinar. Os autores analisam os fatores de comunicação para descrever a aplicação da Comunicação Transdisciplinar.

Este artigo tem como objetivo definir os processos de comunicação e sua relação com a linguagem, considerando seu impacto na colaboração e inovação transdisciplinares.

Após realizar uma revisão sistemática da literatura, o artigo explorou os conceitos de comunicação, funções, linguagem e comunicação transdisciplinar. Isso levou à sua aplicação na abordagem de pesquisa de convergência apresentada na Pirâmide de Convergência Colaborativa.

Palavras-chave: cenário, colaboração, comunicação, comunicação transdisciplinar (TDC), idioleto, fatores, convergência, educação SDG4.

RESUMEN

El estudio adecuado de la comunicación a partir de los modelos existentes abre las puertas a la investigación científica que permite explorar el lenguaje y la codificación como parte integrante de una comunicación eficaz para generar nuevos modelos que incluyan la Colaboración Transdisciplinar. Los autores analizan los factores de la comunicación para describir la aplicación de la Comunicación Transdisciplinaria.

Este trabajo pretende definir los procesos de comunicación y su relación con el lenguaje, considerando su impacto en la colaboración transdisciplinar y la innovación.

Tras realizar una revisión bibliográfica sistemática, el artículo explora los conceptos de comunicación, funciones, lenguaje y Comunicación Transdisciplinar. Esto condujo a su aplicación en el enfoque de investigación de convergencia presentado en la Pirámide de Convergencia Colaborativa.

Palabras clave: escenario, colaboración, comunicación, comunicación transdisciplinar (TDC), idiolecto, factores, convergencia, educación SDG4.

1 INTRODUCTION

Over the past 100 years, various communication models have been explored and debated (Bryson, 1948; Shannon & Weaver, 1963). After reviewing this set of knowledge, we could arrive at the common factors of communication (Fonseca Yerena et al., 2011), understanding the importance of language functions and their coding. As we move beyond the simplified communication models, more factors are nested under the components of communication to describe the growing complexity of the phenomena.

Goal: Define communication processes and their relationship with language, considering their impact on transdisciplinary collaboration.

Thesis: Properly studying communication from existing models opens the doors to scientific research that allows exploring language and coding as an integral part of effective communication to generate new models that include transdisciplinary collaboration.

2 SYSTEMATIC LITERATURE REVIEW

The literature review focused on academic peer-review documents that included definitions, factors, elements, cases, applications, and models on the main general dimensions of Communication Transdisciplinary and Collaboration. The authors agree with the ideas of Dowd & Johnson on the importance of systematic reviews as "they offer clear and compelling answers to questions related to the" who," "why," and "when" of studies" (2020). The process of the Systematic Literature Review (SLR) (Bedenlier et al., 2020; Higgins et al., 2019) used the mapping method (Hernández Sampieri et al., 2014, p. 76) to create a "Concept Map" (Novak & Cañas, 2006) to build the GPE Model matrix (Yáñez León et al., 2022).

This paper will utilize the information yielded from this review to analyze the common factors of communication models, the functions of language, and its ever-changing nature.

3 COMMUNICATION

When doing TD research, you don't necessarily need TDC. Still, when you are doing collaborative Convergence, you need TDC because it is difficult to achieve integration without innovation in your communication. As you move to integration and innovation without TDC, endpoints are impossible. Without TDC, the messages are lost in translation.

3.1 UNIFORMITY AND DATA TRANSMISSION

The transmission of data or signals has a low need for feedback, so the functions of the language tend to be very simple. Therefore, we can identify three factors since the data tends to be more uniform: the Baudot code, data source, data package, and data receiver (as mentioned in Tomasi, 2003).

In its most basic form, communication models (Barnlund, 2013; Berlo, 1960; Frey et al., 1999; McCornack & Ortiz, 2016; Schramm, 1954; Shannon & Weaver, 1963) need three components: Sender (encoder), Message (signal), and Receiver (decoder).

As the data requires more complexity, adding more factors to the communication model will be necessary. In other words, the further we move away from uniformity, the closer we will get to complexity.

Table 1. Communication models and their components

	Source (encoder) / Encoding	Code-decode/Decoding	Destination	The feedback loop	Channel of Communication/Noise	Context Treatment
Linear	X	X	X	X	X	X
Shannon–Weaver	✓	X	X	X	X	X
Circular	✓	X	X	✓	X	X
Transactional	X	X	✓	✓	✓	✓
Schramm ^a	✓	✓	X	X	X	X
Barnlund	X	✓	X	X	✓	✓
Constructionist	✓	✓	✓	✓	X	X
Interactive/convergence ^b	X	✓	X	✓	✓	✓

Note. The table illustrates specific components' presence (✓) or absence (X) in various communication models. The author created this table based on a synthesis of the literature.

^a. This model includes "Semiotic Rules."

^b. This model includes "Behaves."

All these models have certain commonalities, as they generally assume that the sender's Message is uniform.

Hence, you are bringing together multiple disciplines and applying TDC, and the complexity is increased due to the diversity of the stakeholders and the specifics of the scenario. The less trans-disciplinary you are, the more you treat the barriers to effective communication as factors to be dealt with. For example, the lack of understanding of your Message is attributed to the noise, coding, or medium rather than a complex issue like intercultural nonverbal communication. TDC recognizes that in scenarios of collaboration, language, shared vision, and culture are essential factors.

4 THE COMPLEXITY AND FUNCTIONS

The transcendental functions of language "that accompany the basic intentions of man when he wants to communicate with others" Bühler (cited in Pons, 1978, p. 13) are representative, expressive, and appellative.

When communication requires the use of language, intangibles such as context and purpose will be added. To do this, the interaction involves specification of the scenario, which is the standard parameters including "goal, target, and situation."

It is necessary to analyze the functions of language, which adds an extra degree of complexity depending on the speaker's use of the language.

Generally, there are six particular functions of the language to consider: the Conative (or appellative) function, emotive (or expressive) function, phatic function, metalinguistic function, poetic function, and referential function (Blake & Haroldsen, 1977; Pons, 1978; Valdes et al., 2007). Additionally, the authors agree with the ideas of María del Socorro Fonseca Yerena: "Language is a vehicle to communicate ideas, communication is the interaction and interchange of ideas with others, and idioms are the particular way to say or name things" (2011, p. 5). Effective communication is a means of negotiating shared understanding amongst individuals and groups, each with an idiolect.

At this level, the messages acquire greater meaning, so there is a greater need for feedback since it is necessary to check the effectiveness of communication through feedback. All these variables change according to the situation so that the context begins to have more excellent value. These particular language functions will be used for different reasons or purposes. This fact increases the complexity of communication because the same Message said by the same sender can be interpreted and reinterpreted by different receivers in different circumstances. So, it is essential to understand the overall purpose of the communication intent. When intangibles such as emotion or gender are added to the Message, it is imperative to realize that there is a new relationship between context and purpose. Language and its ever-changing nature.

The successful coding of said relationship will facilitate decoding the Message, and therefore, effective communication will have to face fewer barriers (Ivancevich et al., 2006).

5 TDC AND COLLABORATION

At the heart of our discussion is the application of TDC to explore how collaboration adds a new level of complexity to the scenario. The models presented thus far tend to collapse the many factors into a reduced image of TDC. Then, when issues arise, the categories of existing workarounds are applied to limit, categorize, and investigate the interaction of phenomena. Our question is what model arises when TDC is used to Convergence, seeking to move beyond integration at the Interdisciplinary level to attain an innovation that describes a new shared space.

In this collaborative place, TDC serves to identify and elaborate on the many aspects of a new language necessary for practical work, the initiation of new collaborators, and a fully integrated way of disseminating and divulging the work's essential elements.

6 THE INNOVATION OF LANGUAGE

collaboration, the more communication factors must be identified, aligned, and shared. In this way, the individual collaborators build a new space in which the shared language includes aspects like culture, climate, context, and other aspects of the new shared circumstance that the participants understand. This new space then creates a lexicon of induction so that levels of fluency with the specific factors of the scenario mark varying levels of collaboration in the TDC space described within the Collaborative Convergence Pyramid (CCP) (Lipuma et al., 2023, p. 23).

7 CONCLUSION

The aspects of this new language are varied, complex, and numerous. Moreover, they are aligned with the specified scenario. Individuals must negotiate with common sociolects to represent their idiolects as individuals come together. However, in TDC, where there is communication, this is not a one-time alignment activity. This should happen continuously due to the nature of the innovative space being created, the shared vision, and other factors tied to the growth of the shared space, including areas like culture, organizations, and systems.

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