Interdisciplinarity as a Foundation of Scientific Research

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Abstract: The rapid development of modern science has led to an unprecedented specialization of research fields, making it increasingly difficult for individual researchers to address complex scientific problems independently. As a consequence, the era of polymaths has primarily come to an end, while interdisciplinary collaboration has become a fundamental prerequisite for scientific progress. Although specialization remains essential, integrating knowledge across disciplines poses significant methodological and organizational challenges. This paper reflects on interdisciplinarity through a concrete example drawn from the CONNECT conference, emphasizing collaborative methodologies such as the World Café and brainstorming techniques. These approaches demonstrate how researchers from different scientific backgrounds can jointly address complex questions by combining diverse perspectives, methodologies, and forms of expertise. The experience highlights interdisciplinarity not merely as a trend, but as a necessary foundation for contemporary scientific research.

Keywords: open science; European Research Area; Western Balkans; scientific collaboration; knowledge society; interconnectedness; integration

1. Introduction

My name is Srđan Jakovljević. I am a PhD student of mathematics at the University of Novi Sad and a research assistant trainee at the Mathematical Institute of the Serbian Academy of Sciences and Arts. When introducing myself, I often add my hometown, Novi Kneževac. Situated on the banks of the Tisa River, it lies at the tripoint of Serbia, Hungary, and Romania. As a result, it represents a multicultural environment that strongly influenced my personal and academic development.

It all began on a quiet April day while I was checking newly arrived emails. Among them, I noticed an unusual message sent by a colleague from the Faculty of Sciences in Novi Sad, whom I did not know at the time. After reading the information provided on the event's website, I formed an initial impression that this conference represented an opportunity for young researchers from the Western Balkans to meet colleagues from well-established scientific institutions.

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I decided to apply shortly before the deadline. While a recommendation letter was not required, I briefly considered obtaining one. What was required, however, was a letter of motivation. Although I was not fully familiar with formal guidelines for writing such letters, I approached the task honestly and sincerely. My motivation was simple: I wanted to meet new people, exchange ideas, and engage with researchers from different scientific and cultural backgrounds.

The conference was held in Neum, a small coastal town in Bosnia and Herzegovina. Beyond its geographical uniqueness as the country's only access to the Adriatic Sea, the location symbolically reflected the broader cultural and historical context of the region. Bosnia and Herzegovina, and particularly its capital, Sarajevo, is often referred to as the "Jerusalem of the Balkans" due to the coexistence of different religious and cultural traditions. This diversity provided a meaningful backdrop for a conference centered on dialogue, cooperation, and mutual understanding.

The notification that my application had been accepted arrived in June, marking the beginning of preparations for the conference. At the end of August, the journey finally began.

At first, I experienced a moment of doubt. Upon arrival, it became apparent that most participants came from the natural sciences, which initially raised concerns about the breadth of interdisciplinary exchange. This impression was reinforced during the first day of the conference. A well-known children's story, *Mathematics from a Mathematician's Point of View*, came to mind, presenting a hierarchical view of sciences with mathematics at its foundation. Although this metaphor briefly reflected my concerns, they soon proved to be unfounded.

2. Conference Activities

Among the various lectures, workshops, and activities at CONNECT, one concept left a particularly strong impression: the World Café. In this format, participants were divided into four groups, each focusing on a specific topic. Every group included a designated scribe, who remained at the same table, while other participants rotated between tables at fixed time intervals. After each round, the scribe summarized and presented the collected ideas.

Each discussion round lasted only ten minutes. This time constraint created a dynamic environment characterized by a constant flow of ideas and perspectives. Although participants often shared similar academic backgrounds, their individual experiences, viewpoints, and interpretations differed significantly. Academic background is shaped not only by formal education but also by informal learning and life experience, which are often underestimated. The integration of these aspects represents a key strength of interdisciplinary collaboration.

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Time pressure played a crucial role in shaping the discussions. In such conditions, participants tend to express their most intuitive ideas, combining personal convictions with disciplinary knowledge. While not all proposed solutions were effective, each represented an attempt to address a given problem. In this sense, the World Café can be viewed as a simplified simulation of scientific inquiry, where numerous ideas are generated, refined, and evaluated.

The World Café relies on a technique known as brainstorming, emphasizing the rapid generation of ideas. At first glance, the results may appear disorganized; however, this apparent chaos closely resembles the early stages of scientific research. Through synthesis and critical evaluation, meaningful conclusions gradually emerge. Although the discussions primarily addressed topics related to the European Research Area rather than specific scientific problems, the employed methodologies could be effectively adapted for interdisciplinary research teams.

Figure 1. A World Café session.

3. Conclusion

This paper presents a somewhat idealized view of interdisciplinarity; however, such an approach is not unrealistic. Interdisciplinary collaboration requires openness, mutual respect, and a willingness to engage with unfamiliar perspectives. During the conference, I

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experienced how methodological diversity and collective problem-solving can enrich both professional and personal development.

The CONNECT conference undoubtedly had a significant impact on me. Beyond the formal sessions, the interactions with colleagues created a sense of shared purpose and inspiration. The experience reinforced my belief that meaningful scientific progress increasingly depends on collaboration across disciplinary boundaries.

To paraphrase a well-known phrase: *Veni, vidi, connexi*.

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