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**Interdisciplinary Research in Higher Education:  
Beyond the Boundaries of Disciplinarity in Humanities**

**Fatima Zohra ALAOUI MAHREZ<sup>a</sup>, Mariam EL MAKDAD<sup>b</sup>**

<sup>a</sup>*Mohammed I University, Oujda, Morocco falaouimahrez@gmail.com*

<sup>b</sup>*Mohammed I University, Oujda, Morocco elmakdadmaria@gmail.com*

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**Abstract**

The twentieth century was a time of great changes and massive transformations on different levels including the relationship between different branches of knowledge. During this period, complex problems and questions have crossed the boundaries of disciplinarity and, thus, have urged the shift from traditional disciplinary research to the collaboration and intersection of different disciplines. However, many researchers and doctoral students seem unable to make a distinction between the use of interdisciplinary, trans-disciplinary and multidisciplinary researches, and they just use the key terms interchangeably. This paper intends to introduce a conceptual framework to guide doctoral students to better understand these key terms, which facilitate their choice according to the nature of their researches. Additionally, it explains why Interdisciplinary approach is important and why it should be given more attention in higher education, especially in literary studies. In addition to that, the article

supports the idea with examples from the researchers experience as doctoral students working on interdisciplinary research following the auto-ethnographic method. The case study of texts about the Mediterranean is introduced as a topic that requires developing interdisciplinary knowledge in different fields such as history, culture, and geography which is both challenging and unavoidable. Consequently, this paper can be a reference for doctoral students at faculties of letters and human sciences to have a clear vision on the main opportunities and challenges of conducting an interdisciplinary research.

*Keywords:* Interdisciplinarity, Multidisciplinarity, Higher education, Trans-disciplinarity, Literary studies

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## **1. Introduction**

The changing features of academia and higher education studies have imposed the shift from disciplinarity to interdisciplinarity. Earlier, students were required to treat problematic questions within one discipline, without the need to move beyond it to seek other answers. In other words, disciplines were the main frames where research questions were answered and knowledge was produced. However, today, As Julie Thompson Klein (1996) claimed, “crossing the borders is a defining characteristic of our age” (p.1). Hence, interdisciplinarity has become a need for the majority of research questions due to the new nature of academic studies. Researchers have found that disciplines are not sufficient to answer complex questions; rather it

has become necessary to cross the borders and intersect with diverse disciplines for a better understanding of the new demands of the research problematic (Razzaq, Townsend & Pisapia, 2013; Bruun, Hukkinen, Huutoniemi & Klein, 2005; Repko & Szostak, 2017; Graff, 2017; Krishnan, 2009). Academic research has shifted the intention to interdisciplinarity not as being an exception but as being the rule since communication across disciplines has become a norm and academics are involved in this new fashion of research (Graf, 2017).

The interdisciplinary approach is among the most useful modes of research that keep researchers motivated, especially when analysing literary texts. It facilitates the understanding of themes and ideas and drawing connections between different fields of study and academic disciplines. Furthermore, it helps provide a fresh view and enhances the vision of the researcher which ensures exploring texts from varied perspectives; thus, the possibility of producing original results. However, this approach can be challenging for researchers, as it requires developing knowledge and exploring different fields which is time and energy-consuming; yet, it is inevitable in certain research topics such as literary texts about specific places, cultures, or historical periods.

The interdisciplinary approach is different from multidisciplinary and transdisciplinary approaches and applying it in humanities is not always a matter of choice. Taking into consideration that using the interdisciplinary approach introduces various challenges and practical barriers besides its advantages, interdisciplinary approach should be integrated and framed by Moroccan universities in order to be used

appropriately. Accordingly, the methodology we opted for in this study is mixed in nature; including both a conceptual research and autoethnography research methods. The conceptual research stands for the use of a detailed conceptual framework of the term interdisciplinary research to better understand it and differentiate it from other concepts, to construct a clear idea of the term and its application in higher education, particularly in doctoral studies. On the second hand, the use of autoethnography as a method in this research stands for our active inclusion in the present study as main actors and not only as observers, since the researcher in autoethnography “acts as an element of the phenomenon researched, sometimes the main one” (Byczkowska-Owczarek, 2014, p. 12). Additionally, we used evocative autoethnography to describe our own experience as doctoral students working on interdisciplinary research, and to help other doctoral students find out the main challenges and opportunities of IR.

The present article is divided into three parts. The first part contains a conceptual framework for interdisciplinary research. In this part, we define the term interdisciplinarity and distinguish it from disciplinarity, multidisciplinarity and trans-disciplinarity. In the second part, we introduce a personal case study of working of texts about the Mediterranean literature as an example to shed light on the main constraints doctoral students may encounter while conducting researches that require interdisciplinary approach. Finally, in the last part we suggest some practical solutions to integrate interdisciplinary research in Moroccan higher education and to help doctoral students effectively use and apply interdisciplinary approach in their research.

## **2. Interdisciplinary Research: A Conceptual Framework**

Even though interdisciplinary research has dominated diverse fields of study; including natural sciences, social sciences and humanities, the majority of researchers have found difficulties to define it and use it appropriately until the last few decades (Razzaq, Townsend & Pisapia, 2013). The main problematic issue in defining “interdisciplinarity” falls in its interlink with other terms such as cross-disciplinarity, multidisciplinary and trans-disciplinarity (Krishnan, 2009; Razzaq, Townsend & Pisapia, 2013; Klein, 1996). Generally speaking, interdisciplinarity is defined as "any form of dialogue or interaction between two or more disciplines" (Krishnan, 2009, p. 6). This definition is still vague and includes many possible contradictory interpretations. Accordingly, this section seeks to define the term interdisciplinary research and differentiate it from other terms such as multi-disciplinary and trans-disciplinary researches.

### *2.1. Defining Interdisciplinary Research*

The term interdisciplinary research consists of three main parts: inter, disciplinary, and research. ‘Inter’ means between two things, among these things or as derived from these two things or more. “This “between” space is contested space—problems, issues, or questions that are the focus of several disciplines” (Repko & Szostak, 2017, p. 43). To illustrate, these questions cannot be answered without the involvement of different disciplines. For example, African Migration is an interdisciplinary problem which requires answers from diverse disciplines including international politics, economy, international law, social sciences and cultural studies among others.

The term disciplinary is derived from discipline, which is originally borrowed from the Latin words *discipulus* (pupil) and from *disciplina* (teaching) (Krishnan, 2009; Hammarfelt, 2018). Generally speaking, the term means to follow the orders or instructions, and as related to education, it means to follow educational instructions and to stay obedient to them (Hammarfelt, 2018). The term discipline can also refer to authority, exercising power over someone or something and forcing someone to follow the instructions (Krishnan, 2009). In this regard, academic discipline refers to “a particular branch of learning or body of knowledge such as physics, psychology, or history” (Repko & Szostak, 2017, p. 44). In the same vein, academic discipline “can be seen as a form of specific and rigorous scientific training that will turn out practitioners who have been ‘disciplined by their discipline’ for their own good” (Krishnan, 2009, p.8). In other words, academic discipline is a frame of knowledge within which disciplinarians follow the instructions, methods and techniques of this discipline, and “each one who have deviated from their ‘discipline’ can be brought back in line or excluded” (Krishnan, 2009, p.8).

Moreover, academic discipline can be also defined as university subjects, whereas not every university subject is an academic discipline (Krishnan, 2009). Consequently, to distinguish academic discipline from other subject taught, Krishnan (2009, p. 9) introduces six characteristics of academic disciplines:

- 1) They have a particular object of research.
- 2) They have a body of accumulated specialist knowledge referring to their object of research.
- 3) They have theories and concepts that can organise the accumulated specialist knowledge effectively.

- 4) They use Specific terminologies or a specific technical language adjusted to their research object.
- 5) They have developed specific research methods according to their specific research requirements.
- 6) They must have some institutional manifestation in the form of subjects taught at universities or colleges, respective academic departments and professional associations connected to it.

Nevertheless, not all academic disciplines include the six characteristics, some of them lack one or two according to their nature. For example, some humanities disciplines lack unified theories and methods of study as in the case of literature and criticism (Krishnan, 2009).

Traditionally speaking, academic disciplines can be divided into three main categories: natural sciences, social sciences, and humanities (Repko & Szostak, 2017; Krishnan, 2009). The list may be extended to include other modern applied disciplines such as business, communication, education, law, medicine etc., as well as fine and performing art disciplines (Repko & Szostak, 2017). Another classification of disciplines introduced by Biglan (1973) divides them into pure theoretical disciplines, applied disciplines and disciplines that study living or non-living systems (as cited in Krishnan, 2009). All these classifications share the same perceptions of what a discipline is, since its primary duty is to frame it and distinguish it from other disciplines; using specific theories, approaches and methods of study. However, the intersection of different fields has

urged disciplinarians to borrow from other disciplines. For instance, sociologists are borrowing from psychology, history, economy etc. to overcome the new changes within social studies (Akçeşme, Baktır & Steele, 2016).

Consequently, in the last decades, the academic fields have known a fundamental change at the level of their disciplines, and new interdisciplines have emerged to fit that change. In this sense, they end up with many new fields of study that are categorised as interdisciplines such as biochemistry, cultural studies, women studies, environmental studies, social psychology, medical anthropology and geopolitics to name only few (Repko & Szostak, 2017; Klein, 2021). Some researchers use the terms interdisciplines and interdisciplinary interchangeably, but in fact they are different (Klein, 2021; Repko & Szostak, 2017). This is contested by Repko and Szostak (2017) who maintain:

These are [interdisciplines] fields of study that cross traditional disciplinary boundaries and whose subject matter is taught by informal groups of scholars or by well-established research and teaching faculties.[..., which] *may or may not be interdisciplinary*. [...] Some interdisciplines use a wide range of theories, methods, and phenomena, while others behave much like disciplines by focusing on a narrow set of these (p. 45).

To put it differently, Interdisciplines are new fields or frames of study at universities that do not necessarily have interdisciplinary academic problems.



The term “research” is derived from the French word “recherchier”, which means to search and search again to answer or re-answer an inquiry as being not completely answered (Kabir, 2018). Research is also commonly coined with the search for knowledge as well as scientific and systematic search in a specific area (Kabir, 2018; McCuen, 1996). Moreover, it is also defined as scientific investigation using scientific methods and techniques (Kabir, 2018; McCuen, 1996). Richard H. McCuen (1996) set a range of interrelated definitions for the word research:

- 1- [it is a] scientific or scholarly inquiry or investigation and the proper communication of the findings.
- 2- it is the process of searching for, in a broader sense, general answers in any field of study or, in a limited fashion, a solution to just one particular problem.
- 3- it uses a blend of assorted resources, such as classical or modern theory, state-of-the-art technology, statistical technology, and engineering techniques, to uncover previously unknown facts and principles.
- 4- research should be a systematic, controlled, empirical, rigorous, and precise method used to obtain solutions or to discover and interpret new information. (p. 13).

In this regard, research is a scientific investigation to answer a scientific question or solve a problem or inquiry using scientific methods of data collection, analysis and interpretation (Kabir, 2018). Research is also systematic since it follows a logical structure used for each field of investigation. This structure can be seen as: 1)

Identifying the problem; 2) reviewing literature; 3) collecting data; 4) analysing Data; 5) drawing findings and conclusions (Kabir, 2018, p. 2). According to what has been discussed above, interdisciplinary research is, then, any systematic and scientifically structured search of knowledge that requires crossing the boundaries of one discipline and borrows materials and theories from two or more disciplines.

To conduct an interdisciplinary research does not mean only getting funded by different disciplines, or collaborating with different people from different fields, or collaborating with natural scientists, or reading about different disciplines (Krishnan, 2009). Rather, an interdisciplinary research process should “encompass[ing] the development of a conceptual framework, research design, data collection and analysis, and drawing conclusions, if one is to make an endeavor truly interdisciplinary” (Razzaq, Townsend & Pisapia, 2013, p. 153). Hence, interdisciplinary research requires the integration of different ideas, methods and techniques to overcome a scientific problem through the collaboration of scholars from different disciplines (Razzaq, Townsend & Pisapia, 2013). Another definition of interdisciplinary research given by The National Academy of Sciences (2004):

Interdisciplinary research (IDR) is a mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of single discipline or

area of research practice (cited in Razzaq, Townsend & Pisapia, 2013, p. 153).

In the same vein, interdisciplinary research does not obligate team or collaborative work. Individuals can engage in complex inquiries if they master two or more disciplines, and these inquiries can lead to new approaches and theories (Graff, 2017). This idea has been criticised by some scholars who believe that no one can master more than one discipline, an assumption that calls for the collaboration of different scholars to conduct interdisciplinary research (Graff, 2017). In this regard, it could be argued that defining and conducting interdisciplinary research is by no means an easy task, and doctoral students are required to have a wide knowledge and clear vision on their research questions and problem. Furthermore, interdisciplinary research has been used interchangeably with other terms such as multidisciplinary and transdisciplinarity.

#### *2.1.1. Interdisciplinary Research vs. Disciplinary Research*

Interdisciplinarity means to cross the boundaries of disciplinarity, and to cross those boundaries we should make a clear distinction between the nature of disciplinary and interdisciplinary researches (Krishnan, 2009; Razzaq, Townsend & Pisapia, 2013; Graf, 2017, Klein, 1996). Disciplinarians are scholars and experts in one (and only one) discipline while interdisciplinarians are scholars that belong to certain disciplines but go beyond their disciplines to borrow materials, concepts, theories or methods (Razzaq, Townsend & Pisapia, 2013). Additionally, there are three main differences between disciplinary

and interdisciplinary researchers. Disciplinary research “claim[s] a body of knowledge about certain subjects or objects” (Repko & Szostak, 2017, p. 48), while interdisciplinary research constructs its knowledge from different disciplines. Another common difference is that disciplinary research uses the methods and theories that are framed within the discipline. On the contrary, interdisciplinary research is a process of its own but freely borrows materials, theories and methods from diverse disciplines. The third distinction lies in the fact that disciplinary research seeks to produce knowledge within its discipline, while interdisciplinary research does that through the integration of two or more disciplines (Repko & Szostak, 2017).

Most researchers define disciplinary and interdisciplinary research as being opposite, while in reality they complement each other (Graff, 2017). Therefore, academics and researchers need to master their disciplines first in addition to other disciplines so as to be able to choose the appropriate tools for their research problems.

#### *2.1.2. Interdisciplinary Research vs. Multidisciplinary Research*

The concept multidisciplinary consists of two parts; multi and disciplinary. Multi means many and disciplinary as mentioned before entails the boundaries of one discipline. Consequently, multidisciplinary means the use and collaboration of two or more disciplines in a common subject but in an isolated manner (Razzaq, Townsend & Pisapia, 2013). In other words, “[m]ultidisciplinarity refers to the placing side by side of insights from two or more disciplines” (Repko & Szostak, 2017, p.69) and “investigators

share[ing] facilities and research approaches but working separately on distinct aspects of a problem. The outcome is to offer different perspectives on the issues at hand” (Razzaq, Townsend & Pisapia, 2013, p. 153). In this sense, interdisciplinary and multidisciplinary researches refer to two different types of research, even though they both permit the integration of two or more disciplines. In the same line, multidisciplinary approaches “juxtapose separate disciplinary approaches around a common interest, adding breadth of knowledge and approaches. However, disciplines continue to speak as separate voices in encyclopedic alignment and retain their original identity. Underlying assumptions are not examined, and the status quo remains intact” (Klein, 2021, p. xvi).

For instance, a research problem related to Covid 19 could be studied within the boundaries of different disciplines such as medicine, economy, sociology, psychology, politics, etc. and then collect results and introduce them separately using separate methods, approaches, techniques and data to “create a holistic view or common understanding of [this] complex issue, question, or problem” (Bruun, Hukkinen, Huutoniemi & Klein, 2005, p. 28).

### *2.1.3. Interdisciplinary Research vs. Trans-Disciplinary Research*

The term trans-disciplinary research has been defined as synonymous to interdisciplinary research since they both refer to the collaboration and integration of two or more disciplines to solve a complex question (Razzaq, Townsend & Pisapia, 2013), but in reality they somehow introduce two different concepts. Transdisciplinary research

"combines the disciplines used to solve a problem resulting in a new discipline being created, such as nanotechnology or bioinformatics" (Razzaq, Townsend & Pisapia, 2013, p. 154). In this regard, it is a complementary research to interdisciplinarity since it "involves the integration also of *insights generated outside the academy*, a team approach to research, the active involvement of non-academic participants in research design, and a "case study" approach" (Repko & Szostak, 2017, p. 72). Moreover, trans-disciplinary research tries to solve real-world problems through the help of both academics and non-academics (Bergmann, et al., 2012) such as politicians, civil society "who may be involved in the development of policy or practices related to these new areas" (Razzaq, Townsend & Pisapia, 2013, p. 154).

Trans-disciplinary research become more prominent in the late 1990s "as a way of crossing disciplinary boundaries and is today understood as a form of systematic exchanges among the subjects" (Akçeşme, Baktır & Steele, 2016, p. ix), and it "also elevated new relationships between science and society while challenging traditional alignment with disciplines (Klein, 2021, p. xix). Subsequently, it does not cross only the boundaries of disciplines, but it goes beyond sectors of society and science (Bruun, Hukkinen, Huutoniemi & Klein, 2005; Razzaq, Townsend & Pisapia, 2013). In the late 20<sup>th</sup> century, for instance, many humanities fields used transdisciplinarity as a frame of study to solve complex problems related to the integration of different disciplines in new emerging angles of study such as media studies, women studies and environmental studies (Bruun, Hukkinen, Huutoniemi & Klein, 2005).

In a nutshell, the changes in knowledge and academia play a significant role in changing the way in which academic research should be done. The universality and unity of methods in each discipline, as well as the borders and boundaries between disciplines are becoming subject of criticism and change since interdisciplinary research has shown its effectiveness in solving many complex questions, or at least introducing new ways of conducting research. Social sciences and humanities, as well, are urging the collaboration and integration of diverse disciplines, the borrowing of methods and techniques and the creation and development of new disciplines and approaches. Thus, doctoral students are in the right position to collaborate and contribute to elucidate and evaluate complex academic problems.

### **3. Interdisciplinary research in literary studies**

As stated previously, the interdisciplinary approach is not a field itself, but a mode of research that changes, develops, and that is not bound to any specific area of research. Due to this and besides the effective results it has shown so far, an interdisciplinary approach should be adopted in all research fields in higher education without exception. In fact, the interdisciplinary approach is highly considered in scientific fields that suggest critical problems that need to be analysed from different perspectives. However, not much is said about the interdisciplinary approach when it comes to literary studies though this later is progressively adopting the interdisciplinary research

method by opening itself up to other fields and research methods.

Literary studies:

[...] is increasingly borrowing theoretical tools from other subjects in order to analyse the historical, socio-political, and institutional conditions of the production of literary texts to identify the general discursive circumstances in which they emerge and to study the relationship between literature and other media (Akçeşme, Baktır & Steele, 2006 )

In fact, understanding literary texts is a complex task that can be achieved through different manners. There is a variety of literary theories that can be applied by readers for a better understanding of texts. While some focus on the text itself such as formalism and structuralism, others indicate that the analysis of literary texts extends the systematic perception of words and their lexical and semantic connection to understanding them based on knowledge derived from other fields such as historicism, new historicism, and cultural theory to mention but a few. Even more, cognitive literary criticism suggests engaging literature and other scientific fields.

Following one theory or another is sometimes a matter of choice, but the nature of some texts imposes going beyond the text itself to include other fields. In this case, following the interdisciplinary approach becomes mandatory. For instance, based on personal experience, understanding literary texts about the Mediterranean and analysing them cannot be done without having, at least, basic knowledge in specific fields. First of all, the geography of the region, including both the physical geography that helps understand the



structure of the region and the human geography that helps understand human societies that spread across it. Without such knowledge, one cannot follow up with authors especially if the text is classified as non-fiction, such as travel narratives. Second, the researcher should also be aware of the historical background of the region. Cultural history, political history, social history, economic history, and intellectual history all play a fundamental role in understanding such literary texts, as it can help researchers understand how societies changed and developed over time, which means a deeper understanding of literary texts about specific places or regions. This, in addition to the necessity of understanding trade, the history of religion in the region, pilgrimage routes, cultural heritage, and many more, require a long process of research and discovery.

### *3.1 Advantages of interdisciplinary research in literary studies*

The advantages of interdisciplinary research are many both on the level of the research and the researcher. Starting with this later, interdisciplinary research helps researchers and students in particular to become more creative (Chettiparamb, 2007) through developing soft and transferable skills without which even the finest professionals cannot obtain decent results (Labzina, Dobrova, Menshenina, Ageenko, 2019). Those include critical thinking, analytical thinking, open-mindedness, creative problem solving, negotiation, and many more. Furthermore, interdisciplinary research helps develop essential collaboration skills by way of encouraging individuals to undertake group tasks (Chettiparamb, 2007, p. 28). Interdisciplinary research also allows comparing and contrasting different viewpoints from different research fields in order to find how the concerned fields can

work together and relate to each other. In addition to that, interdisciplinary research can keep researchers motivated on their journey, as they have to discover different fields and learn new things all the time. According to Chettiparamb,

Practicing interdisciplinarity makes it possible for students to continue to remain interested and curious about their work, and they are more highly motivated as a result of feeling that the subjects they are studying are relevant to reality, and as a result of sensing the newness of the subject and the chance to have more enriching personal contacts. (2007, p. 28)

This can rekindle researchers' desire to study, discover, and know more, which will affect the quality of the research itself. Due to these reasons, it is mandatory to consider teaching literary subjects with an interdisciplinary approach and provide doctoral researchers in literary fields with training on how to use the interdisciplinary approach effectively as a way of developing their pedagogical competencies.

On the level of research, the interdisciplinary approach can have many advantages. First of all, interdisciplinary research broadens the perspective of researchers, which helps them reach out to results that can be interesting for readers and researchers from different fields all at once. Instead of analysing a text from a literary perspective only, one can analyse the text from the perspective of a historian, philosopher, economist, geographer, politician, and others depending on the research questions. Being able to analyse cases from all of those perspectives at the same time will ensure valuable and interesting results for several community groups and a wider audience.

Second, Multidisciplinary research can enhance the vision of researchers in their own discipline thanks to the exchange of information, methods and techniques which enrich and refresh researchers' perspectives and ways of dealing with research problems and questions. Third, the high possibility of generating new ideas due to exploration and interaction can lead to producing original results and open new areas of research.

With specialized education, students will always have to follow pre-existing systems without having the chance to cross over various disciplines in order to be creative and find different and original results. In his book *Advice for a Young Investigator*, Santiago Roman Y Cajal states (1897) that "to discover is to bring together two ideas that were previously unlinked" (p. 54). Though this quote has been said in the context of scientific studies, I believe it can be true in any research field. Interaction between different academic disciplines and between researchers from different fields should be highly encouraged in higher education and in doctoral studies more specifically in order to avoid the traditional specialized training that forces students to learn a single particular discipline in-depth, which results in producing researchers who cannot be creative.

### *3.2 Challenges of interdisciplinary research in literary studies*

Despite the various advantages of the interdisciplinary approach, it still has its limitations as well. Many challenges of interdisciplinary research in humanities are the same as those found in other research fields. Among the most common problems that are faced in interdisciplinary research, we find the difficulty to set up a link that is

coherent and smooth between different disciplines, which might lead to a lack of a sense of purpose (Benson, 1982). For instance, when analysing literary texts about the Mediterranean, some questions require answers in which history, geography, religion, and economy are all included. It is a complicated task to find out the most suitable and easy-to-understand link between the different ideas in order to avoid ambiguity; in addition to the fact that interdisciplinary papers “may be perceived as having a lower “value” (e.g. as a result of publication in lower impact journals)” (Barkovic, 2010, p. 957).

Furthermore, interdisciplinary researchers are considered less productive when compared to more specialized researchers due to the fact that good interdisciplinary research requires a long time (Barkovic, 2010, p. 957). In addition to that, it is widely acknowledged that in order to get the best results from the interdisciplinary approach, there should be collaboration between professors and students from different fields. This condition is hard to achieve most of the time, especially since each department works on its specialty individually. The other challenge is that doing interdisciplinary research is time-consuming as it requires a long process of research and discovery of different disciplines. For example, in order to understand particular texts about the Mediterranean, one finds himself having to read multiple other books that belong to different research fields in order to reach a good level of comprehension. Finally interdisciplinary research also requires patience, flexibility, and adaptability. These challenges are familiar to interdisciplinary researchers. However, researchers can overcome them, especially when taking into consideration the quality of the

research that is going to be produced and the skills that will be gained throughout the journey.

#### **4. Recommended practical solutions**

Applying interdisciplinarity in higher education can be challenging; however, it is of vital importance in all higher education fields and institutions due to the significant results it has shown when applied appropriately. The advantages of interdisciplinary research “are not typically found in conventional approaches to higher education through a focus on the discrete study of disciplines” (Davies & Devlin, 2010, p. 28) However, integrating interdisciplinary in higher education is a complicated process that should respect certain limits, due to the fact that it “should occur in a manner that does not violate disciplinary cultures and values, and instead promotes dialogue between protagonists from different disciplines” (Davies & Devlin, 2010, p.27). Interdisciplinary research has shown significant results when applied appropriately. Thus, higher education institutions should consider encouraging interdisciplinarity through applying solutions such as:

- Organizing workshops that will bring together researchers from different laboratories and research fields to discuss specific topics. Each group of students will have a different point of view and different way of analysis. Sharing those opinions and rising discussions will introduce the students to new concepts, ideas, ways of thinking, disciplines, and fields of research.
- “Descending programmes” (Davies & Devlin, 2010, p. 27) is another way to encourage interdisciplinarity in Moroccan

universities, through releasing new programs that are not bound to one single department.

- Encouraging students to find out ways through which they can connect different research fields in one research as a sort of originality.
- Having students working on interdisciplinary topics supervised but more than one supervisor who are specialized in the concerned fields.
- Collaboration between different laboratories across universities and faculties

## **5. Conclusion**

Interdisciplinary research is increasingly gaining interest globally and in all research fields, due to the promising results researchers reach when boundaries between traditional fields are transcended to produce answers to complicated questions. However, interdisciplinarity is not as simple and easy to adopt as it might appear at first glance. Taking into consideration that interdisciplinarity has become a phenomenon in academia, scholars have agreed on a set of rules that should be followed when applying interdisciplinarity and that differentiate it from other approaches such as multidisciplinary and trans-disciplinarity. Thus, encouraging researchers to become interdisciplinary and to work across disciplinary boundaries is not enough; instead, higher education institutions should give more attention to this mode of research by integrating it into different programs. As a result, interdisciplinarity will be studied and practiced, and interdisciplinary research can be supervised appropriately. To

conclude, intersdisciplinarity is among the approaches that should be given more attention in higher education and all fields without exception, to be able to cross not only cognitive and disciplinary boundaries but also institutional ones. Taking into consideration that what researchers do in whatever field is looking for answers and trying to solve problems, doing that through crossing boundaries to look at cases from different perspectives might help researchers reach satisfying and original results, in addition to producing qualified, effective, competent and flexible researchers.

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#### **AUTHORS BIODATA**

**Fatima Zohra ALAOU MAHREZ** is a doctoral student at the Space and Culture Research Group-CEDUC Laboratory at the English Department of Faculty of Letters and Human Sciences of Mohammed 1<sup>st</sup> University Oujda. She is a temporary professor at Faculty of letters and human sciences; and Applied Engineering Department of the Higher School of Technology Oujda. She holds an MA in Communication, Culture and Translation. Her major areas of interest are interdisciplinary in nature including: intercultural communication, higher education, critical thinking, critical discourse analysis, international relations, and public relations.

**Mariam EL MAKDAD** is a doctoral researcher in Culture, Education, Digital Usage and creativity laboratory- Space and culture group, UMP, Oujda. She is currently a temporary teacher at ENSAH and previously at FLSHO. She is an MA holder in English literature and the History of Ideas from Abdelmalek Essaadi University. Her research focuses are literature, Culture, History and Education