Mapping Trends of Distance Language Education: An Overview of Research (2015-2021)

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Abstract:
This study intends to explore the current trends in the field of distance language education research published between the periods of 2015 and 2021. The objective is to provide insight into the current points of emphasis of research on distance education. An extensive overview of research was conducted reviewing all journals in Scopus dataset. A total of 990 articles was extracted according to relevance and pertinence criterion. Principally, bibliometric analysis was employed with the objective of mapping the current state of the arts in distance language education research. Also, content analysis was solely used to identify the methodological approaches utilized by the researchers. The study identifies the most frequently cited authors and most commonly used keywords and terms and journals with highest number of publications in studies on distance language education. The following categories represent the focal themes: research areas, methodological approaches, co-authorship between countries and authors. The findings of this study are expected to provide a comprehensive mapping to the state of the art in the field and may provide a significant insight in the identification of potential neglected areas in the field of distance education with recommendations for prospective research and practice.

Keywords: Distance Education Research; Research development; Research themes and trends; Needs and Challenges; Bibliometric and Content Analysis.

Introduction
The rapid growth and improvement in Information and Communication Technology along with the current worldwide health crisis of Covid-19 has led to an extensive refuge to distance education. A huge number of students, teachers and trainers’ lives is now devoted to new digitized ways of instruction, and this state will probably continue well after this global crisis is finished. New avenues of instruction are now being explored and exploited far more compared to the past. A whole new, flexible, accessible, and open mode of teaching and learning is made available for the masses with no physical boundaries attached. What characterizes distance education most is the speed of human communication in being virtually quicker with far more extensive collaboration between people from all corners of the world, who in absence of distance education would have to face huge distance and economic challenges. In a digitized context, the transition from regular teaching methods to distance education offered a significant opportunity for teachers and students in the learning of new skills to adapt to an unfamiliar environment, in some areas of the world, while it continuous to be a challenge for others. Thus, a mapping of the current trends in distance language education research is crucial to identify the points of strength and weaknesses in the field. A mapping of existing literature will also provide a wider picture on the amount of research produced in different parts of the world on distance education. Additionally, studying the opportunities and challenges linked to the past and present transition in education and education research is vital in shedding light on some of the advantages and disadvantages in the research related to issues.
of intersectionality with other fields of inquiry. This paper maps the trends in distance language education research within a seven-year time frame with the goal of offering better recommendations for prospective research. It is important to note that, linked to each aspect of distance education research, several studies had been conducted to review research progress during a specific point in time or over extended periods to provide an overview of research on distance education.

**Literature Review:**

Distance education being a multidisciplinary field has had its fair share of reviews over the years. The Trends in distance education research had been investigated relying on different types of analysis; bibliometric analysis, content analysis, systematic literature reviews, and reviews mapping, identifying and classifying the existent literature on distance education research within a delineated time frame. the main objective behind such research is to, in addition to the mapping of existing literature providing a report on the state of the art in the discipline with its intersections with other neighboring fields of inquiry, it essentially provides a comprehensive overview on the research identifying gaps or disregarded areas to offer recommendations for both future research and practice and the current study is no exception. Some of the following earlier works that had been conducted with similar objectives. A research conducted in 2015 for example, a content analysis of journals collected in which the current trends in the field of distance education research was explored during the period of 2009-2013. The trends were identified by an extensive review of seven peer reviewed scholarly journals (Bozkurt, Ozbek, Yilmazel, Erdogdu, Ucar, Guler, Sezgin, Karadeniz, Ersoy, Canbek, Dincer, Ari, Aydin, 2015). In addition to content analysis, a bibliometric exploration of the qualitative research literature in distance education can be used relying on a network approach in this research as another example (Wolf, Andrzejewski, Clark., Forney, 2020). In this study, the authors focused on describing the trends–theoretical as well as methodological–of recent (2014–2018) qualitative scholarship in distance education. An Analysis of the Journey of open and distance education: major concepts and cutoff points in research trends, in which they identified the research trends, major concepts, and cutoff points in the articles published between 2009 and 2016 analyzed through a systematic literature review process using content analysis as well. (Çakıroğlu1, Kokoç1, Seyfullah Gökoğlu, Öztürk, and Erdoğdu1, 2019). With similar purposes, the visualizing of research trends and research theme evolution in E-learning field was investigated between the years 1999–2018 (Bai1, Hongxiu LI, Yong Liu, 2020). In this study, they provided a comprehensive understanding of the evolution of major research themes and trends in e-learning research.

A Systematic Analysis and Synthesis of the Empirical MOOC Literature Published in 2013– 2015 addressed gaps in the scholarly understanding of MOOCs. The study presents a comprehensive picture of the literature by examining the geographic distribution, publication outlets, citations, data collection and analysis methods, and research strands of empirical research focusing on MOOCs during this time period (Veletsianos and Shepherdson, 2019). Investigating the usage, issues and impact of tech-devices in e-learning or distance education was addressed with a systematic review of articles between 2011-2015 investigating research trends in mobile learning in higher education: identifying emerging trends in mobile learning research in higher education (Krull and Duart, 2017). In addition to investigations linked to conceptualizations of distance education as a concept and the technology used in e-learning platforms, another similar study addressed the context and learning spaces in distance education with a systematic review study between 2008-2017. The study is considered to be important as no content analysis addressed the concept of learning spaces (Durak, Cankaya, 2018).
Currently, with advances in communication and information technologies and with the state of emergency that the world is witnessing, a rapid and unplanned change led to the emergence and rise of fame of many e-learning platforms and communication soft wares. One of these current massive platforms is the massive online open courses MOOCs. Thus, research studies were conducted to address all aspects related to efficiency, impact, utility, advantages and disadvantages of the platform. A review and content analysis of research on MOOCs (2008-2015) addressed some of the prevalent themes mapping trends and patterns in massive open Online courses. They discovered that though theoretical or conceptual studies are preferred by researchers, MOOC research generally does not benefit from being viewed through theoretical or conceptual lenses (Bozkurt1, Özbek, and Richter, 2017). Furthermore, analyzing methods and approaches deployed in the literature is very common within this type of enquiry. In a study conducted from 2005-2014, methodological trends of the distance education were identified with an extensive content analysis of theses published in Turkey. This study provided a comprehensive understanding of the evolution of major research themes and trends in e-learning research (Gökmen, Uysal, Yaşar., Kırksekiz, Güvendi, Horzum, 2021). When it comes to terms co-occurrence and most used key words by authors is an essential part of most reviews regardless of the type. Therefore, a co-word analysis, for example and a cluster analysis, social network analysis, strategic diagram, and graph theory are often applied in the analysis of two time periods: 1999–2008 and 2009–2018. This study detected the bridging, popular, and core topics in e-learning research for the two periods. Exploring trends and patterns of theory use in open and distance education research journals 2009-2018 (Ukwoma., Ngulube, 2021). The current study makes use of both types of analysis, to some degree, bibliometric analysis to shed light on the state of the arts in distance language education research and a content analysis to identify authors preferences with regard to concepts and the methodological approaches applied.

1. **Objective and Research Questions:**

Distance education research is changing continuously and rapidly in tandem with advances in communication technologies and technology in general. Evidently, the field of distance education is linked to various interrelated disciplines and new research avenues are revealed continuously. Hence, the state of the art in distance education is in need of continuous review and analyses to gain a wider and accurate perspective on its future search in various domains of inquiry and application. A refuge to online courses became the “new normal” of formal education; especially MOOCs online courses platform. Other social and professional media and software outlets have witnesses a massive success compared to its past circumstantial utility. This has with no doubt had a tremendous impact on learners, teachers, trainers and organizations as a whole. Effects on different levels can be pointed out without a need for a formal economic, social or psychological relevant study. A complete and quite shift has had its permanent impact on various spheres of living, reminding us of the sobering fact that change is permanent and adaptation is and remains the only means of survival. Consequently, a thorough and continuous review of every field is vital in the mapping and scrutiny of the impact, relevance, limitations and gaps that are and with no doubt present in all areas of thinking. In particular, and what concerns us more here in this paper, is the advancement of distance education research, its impact, relevance, and limitations with special regard to its intersections with other related or unrelated neighboring fields of inquiry. This paper aims, despite its restricted space, to cover the objective in mapping trends in distance education research between 2015-2021. To cover these objective, the following research questions led the inquiry:
What are the most cited authors?
Which journals have the largest number of articles in distance language education research?
What is the leading field in the distance language education research?
What are the chosen methodological approaches?
What are the most frequently used key words?
What terms occur most frequently within the research?
What is the highest amount of co-authorship between countries in distance language education?
What is the highest amount of co-authorship between authors in the field?

2. Methodology:
For this research overview, I developed a search strategy to identify the relevant literature. This search strategy was allotted to one of the most widely used databases: Scopus and the search terms used were the following: “Distance education” AND “Language Learning”. The search spanned from the database year 2015 until 2021, though present 2021 research is not yet finalized, an inclusion was necessary for a complete and comprehensive assessment addressing possible measurements for the relevant questions only. The search mainly focused on the mapping of existing literature on distance language education in the social sciences field, arts and humanities, business, psychology, sociology, computer science, engineering, business management and accounting, medicine, energy physics and astronomy, material sciences, agriculture and biological sciences, neuroscience, etc. The search was then narrowed to include subject areas of the social sciences, arts and humanities and multidisciplinary fields. The search span from the year 2015-2021. All articles before 2015 were excluded from the search. Articles from any country were not excluded. A total search result 6,388 and a total of 5,398 articles were excluded following the exclusion procedure, with a total of 990 records extracted at this stage. The study is based on original research articles only, and conference papers from journals and conference proceedings. At the publication stage, only articles at the final stage of publication were extracted. For maintaining the quality of the review, abstracts of the articles were checked deeply for the analysis and purification of the articles to ensure the quality and relevance of academic literature included in the review process. A careful evaluation of each research paper was conducted at a later stage. The next exclusion criteria were to limit records to English language only.

3. Results and Interpretation: Bibliometric and Content Analysis
3.1. Results:
Table 1: Journals with most publication records

<table>
<thead>
<tr>
<th>Journals</th>
<th>Records</th>
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<tr>
<td>International Journal Of Emerging Technologies In Learning</td>
<td>57</td>
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<tr>
<td>Turkish Online Journal Of Distance Education</td>
<td>57</td>
</tr>
<tr>
<td>International Review Of Research In Open And Distance Learning</td>
<td>44</td>
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<tr>
<td>Online Learning Journal</td>
<td>37</td>
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<tr>
<td>Sustainability Switzerland</td>
<td>33</td>
</tr>
<tr>
<td>International Journal Of Educational Technology In Higher Education</td>
<td>23</td>
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<tr>
<td>Australasian Journal Of Educational Technology</td>
<td>26</td>
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<tr>
<td>International Journal Of Instruction</td>
<td>22</td>
</tr>
<tr>
<td>Journal Of Information Technology Education Research</td>
<td>16</td>
</tr>
<tr>
<td>Universal Journal Of Educational Research</td>
<td>14</td>
</tr>
<tr>
<td>International Journal Of Distance Education Technologies</td>
<td>14</td>
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<tr>
<td>Computers And Education</td>
<td>14</td>
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<tr>
<td>Education Sciences</td>
<td>14</td>
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<tr>
<td>Eurasia Journal Of Mathematics Science And Technology Education</td>
<td>13</td>
</tr>
<tr>
<td>International Journal Of Learning Teaching And Educational Research</td>
<td>11</td>
</tr>
<tr>
<td>International Journal Of Higher Education</td>
<td>11</td>
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<tr>
<td>Cogent Education</td>
<td>11</td>
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<tr>
<td>Journal Of Asia Tefl</td>
<td>10</td>
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<tr>
<td>Indonesian Journal Of Applied Linguistics</td>
<td>10</td>
</tr>
<tr>
<td>Journal Of Interactive Media In Education</td>
<td>8</td>
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<tr>
<td>Education And Information Technologies</td>
<td>8</td>
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Table 1 classifies the journals with the most publications by year from 2015-2021. The leading journal is International Journal of Emerging Technologies in Learning with 57 publications per year, followed by the Turkish Online Journal of Distance Education with the exact same number.

3.2. Interpretation:

The extracted data set of the selected empirical studies on distance language education focused on various topics of all journals in Scopus database; most notably the ones with the highest number of publications per year (Table 1). Specifically, most studies conducted between the periods of 2015-2020 have increased considerable throughout the years. The broader focus of most studies targeted issues related to various issues addressing opportunities as well as challenges in the field each in their own specified time frame, type of participants; and relevant contexts. Some of the studies themes included student’s experiences of online learning, e-
learning’s impact on learners, society and intuitions or organizations, most widely used technology in distance education, teacher’s perceptions about distance education, the integration of ICT in distance education and regular formal instruction, and conceptualization and institutionalization of distance education.

The article distribution by year in figure 1 of the selected year range 2015 to 2020 clearly shows a significant increase from 2015 till 2020, with an exceeding number of articles produced from 2018/2019 till 2020. The year 2021 was excluded because the research conducted at this time is not yet finalized and so an accurate picture and proper estimation of research articles numbers produced during this period will not be correct. Such an increase is justifiable bearing in mind the urgent state of things that our world is experiencing at all levels. Covid-19 has resulted in educational institutions closing all around the world. Consequently, education has drastically changed in an unplanned and rapid way with a significant rise of e-learning as substitute carried out in virtual spaces using digital platforms as medium. This has certainly transformed the way of learning, teaching and training. Accordingly, research on distance education came as a response addressing the challenges, studying the opportunities, providing the best possible recommendations for research and practice all in a very fast and encompassing mode.

When it comes to the documents production by country or area in the second figure and within the same selected year range, we notice that the leading country in terms of articles and conference papers production per year is headed by the United States followed by China, Taiwan, Thailand, Finland, Belgium, Egypt, United Arab Emirates, Greece, India, Sri Lanka, Equator, Iraq, North Macedonia, Tanzania, Austria, Denmark, Mongolia, Togo, Malawi. The US is undoubtedly a leader in online education in the world today with hundreds of online colleges and thousands of online courses made available to students from around the world. Thus, the studies conducted on distance education research will follow such an increasing demand to describe, analyze and prescribe recommendations for continuous and effective improvement in the sector.

In figure 3, the document distribution by author shows the number of articles produced by year per author within the same time frame. The author with most productions per year is Martin, F. Dr. Florence Martin is a professor in learning, design and technology from the university of technology Arizona state. She has conducted several studies focusing on designing and integrating online learning contexts to improve learners’ achievements and effective engagement. Currently, and within the data base extracted from Scopus data set, she leads the research with the largest number of articles produced within the same specified time frame with many publications in several leading journals in the field of instructional technology. Followed by Amirul Mukminin, a professor in educational policy in Florida state university; Ayub, A.F.M; Jksimovic; Moreno-Guerrero; Brown, M; Chalak, A; Graham, C.R; Hwang.

Lastly, figure 4 displays documents distribution by field with the highest number of articles and conference papers production per year headed by the social sciences discipline with over 68% followed by computer science, arts and humanities, psychology and multidisciplinary. Distance education being a multidisciplinary field of inquiry and educational discipline encompasses aspects from neighboring disciplines like philosophy, psychology, history, economics, organizational theory and sociology. Hence, the leading discipline in distance education research is the social sciences that focuses essentially on topics connected to human behavior in relation to society and culture at large including education at the center.
1.1. Results:

A full counting with a maximum number of counties per document 25. Minimum number of countries selected 42.

of documents of a country. Of the 107 countries, 42 met the threshold. For each of the 107 countries, the total strength of the co-authorship links with other countries was calculated. Number of countries selected 42.

Figure 8: Co-occurrence of a term.

Extracted from the title and abstract fields. A full counting of 17987 terms, 865 met the threshold. Number of terms selected 519. A total strength of co-occurrence links with other terms was calculated.

Figure 7: Network of cooperation: co-authorship between countries.

Fields from which terms were selected are Title and abstract fields. A full counting with a minimum number of occurrences of a term reduced from a standard 10 to 8. Of the 3590 terms, 186 met the threshold. Number of Keywords selected 186. A total strength of the co-occurrence links with other keywords was calculated.

Figure 9: Co-occurrence of Key words.

Full counting with maximum numbers of authors per document 25. Minimum number of documents of an author 1. Minimum number of citations of an author 0. Of the 2476 authors, 1476 met the threshold. For each of the 1000 authors, the total link strength of co-authorship with other authors was calculated. The authors with the greatest total link strength was selected. Number of authors selected 1000.

Figure 10: Cooperation network: co-authorship between authors.
3.3. Interpretation

In Figure 5, we distinguish quantitative, qualitative, and mixed methods as methodological approaches selected by authors within an N=382 articles from 2015-2021. Quantitative research methods constitute an objectivity and reliable range of data that applies objective measurement and accurate statistical analysis answering a research question or addressing a research objective relying on the use surveys and questionnaires for the most part. Qualitative research, on the other hand involves an interpretive approach to the study of particular phenomenon through the analysis of interviews, conversations, notes taken from field search, images, recordings, etc. The mixed methods approach involves the use of both qualitative and quantitative data collection and analysis procedures in different stages of research. From the 382 articles extracted for analysis, the qualitative approach constituted the larger methodological approach used in 174 studies, followed by quantitative methods used 124 studies, and lastly mixed methods used in 84 studies with only 22%. It appears that there has been a significant shift from the quantitative objectivist approach to the interpretative qualitative research design. The same result has been reported in 2015 study mapping trends in distance education research between the years 2009-2013.

In Figure 6, a textual analysis of term occurrence revealed “MOOC” as a prevalent used term. The butterfly graph exported from Tropes displays relationships between categories of terms. N=990 abstracts were extracted for textual analysis. The term MOOC is found 266 times of the overall data. The massive open online courses (MOOCs) are free online courses available that provides educational access to all people around the globe. As a result, an extensive amount of research on distance education or e-learning was carried out investigating the potential and challenges of MOOCs for universities, its flexibility and platform efficiency, learners, teachers and content produced in it, and the overall quality of MOOCs and instructional design matters.

Co-authorship between countries in figure 7 shows a collaboration map between major countries based on co-authorship of their authors. The different colors represent the different clusters formed by the group of countries and the circle seize constitute the number of articles per country. The bigger the circle of each country, the bigger amount of publications based on
co-authorship. Cluster 1, the largest, includes the United states being the biggest circle and country that collaborates in co-authorship with other countries with an average of 152 publications and 1400 citations. Followed by Turkey with a total of 92 and 416 citations. Malaysia with 76 and 431 cites, United Kingdom with 69 publications per year, and 1161 citations. China with 71 and 318 cites. Spain with 66 and 302 citations. Indonesia with 62 and 290 publications. Australia with 58 and 952 cites. Iran with 45 and 122 citations. Saudi Arabia with a 39 articles and 145 citations. Russian federation with 24 documents per year and 89 citations. Canada with 29 and 497 cites. Netherlands with 27 and 266 cites. South Africa with 25 and 69 citations. South Korea with 13 and 39. Finland with 13 and 410 cites. Sweden with 11 and 211 citations. Germany with 10 and 151 cites. Norway with 9 and 77 citations.

Co-authorship between authors displayed in figure 10 shows a collaboration map between major authors based on co-authorship with other authors. The different colors represent the different clusters formed by the group of authors or one author and the circle seize constitute the number of articles per author in co-authorship with other authors. The bigger the circle of each, the bigger amount of publications based on co-authorship. Cluster 1, Zhang j. Chang, Zhang x. Zheng, Zhu w. yang j. Watson s., brown m. Wang j. Bonk c. j. One major observation that can be deduced from the list of co-authorship between authors is the predominance of Asian names in the network. This can be explained on the following grounds: This was, in a large part, a major strategy implemented by China in recent year. The prime objective behind it was to adopt measures to transform communication and information and technology; being China’s core industry. The objective behind such major move and shift in the country’s priorities was led by an essential objective, that being a complete independence from foreign companies (Carlos Infante Moro, 2020). The competition and ambition to become leaders in the information and communication technology industry drove China’s decisions with regard to a change in the dynamic of communication and collaboration with co-authorship in academia as example in the collaboration network provided in figure 10.

**Conclusion and Future Implication**

This study explored the current trends in the field of distance language education research published between the period of 2015 and 2021. An extensive overview of research was conducted reviewing all journals in Scopus dataset. A total of 990 articles was extracted according to relevance and pertinence criterion. Principally, bibliometric analysis was employed with the objective of mapping the current state of the arts in distance language education research with content analysis used identified the methodological approaches utilized by the researchers. Qualitative mythology was adopted most by authors followed by quantitative methodology and lastly a mixed approach with a minimum application. The study identifies the most frequently cited authors and most commonly used keywords and terms and journals with highest number of publications in studies on distance language education. The research areas were identified with the social sciences taking the lead in distance language education proximately followed by computer science and other disciplines with a minimum amount of publications.

The analysis of collaboration and co-authorship between countries and authors revealed interesting insights linked to its direct intersection with information and communication technological industry as well as economy. China took the lead when it comes to collaborations based on co-authorship between authors, locally mostly, while United States prevailed in collaborations linked to co-authorship between countries. The most widely used key words by authors in the search revealed a frequent occurrence of the term “higher education”, “e-learning”, “blended learning”, “learner”, “efficacy”, “MOOCs”. Over recent years and
presently, the terms are gaining more and more prevalence in education discipline with no sign of a decrease which probably suggest that distance education is here to stay long or maybe after the crisis is over. For one main reason, distance education is now providing a huge platform and access opportunity for all with a high speed of information delivery, retention and unrestricted access collapsing the wall of both time and space. Information and communication technology has certainly transformed the way the information is accessed, retrieved and archived; and the change and transformation in education was quick and unplanned which heightened the need for research in the field.

The study presented a descriptive macro-level bibliometric analysis identifying the highest amount of research produced in journals, the most cited authors, the greatest amount of collaborations between countries, the leading countries in terms of publications, citations and co-authorship between authors, the distribution of publications by subject area, the most widely used key terms and preferred methodological approaches by researchers in the field of distance language education research. At the macro level, in terms of the field’s intersection with other disciplines, more work is needed to identify the causes and provide remedies for the minimum amount of interdisciplinarity with neighboring fields of similar inquiries and objectives; this would immensely enrich the conceptual background and provide limitless avenues or applied research. Additionally, the collaboration in terms of co-authorship between authors and counties is a golden asset for any field of inquiry and especially distance language education. At the micro level, the methodological preferences need to shift from a one methodology focused design to a mixed method approach to fulfil the intellectual standards of breadth and depth in a holistic research.

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