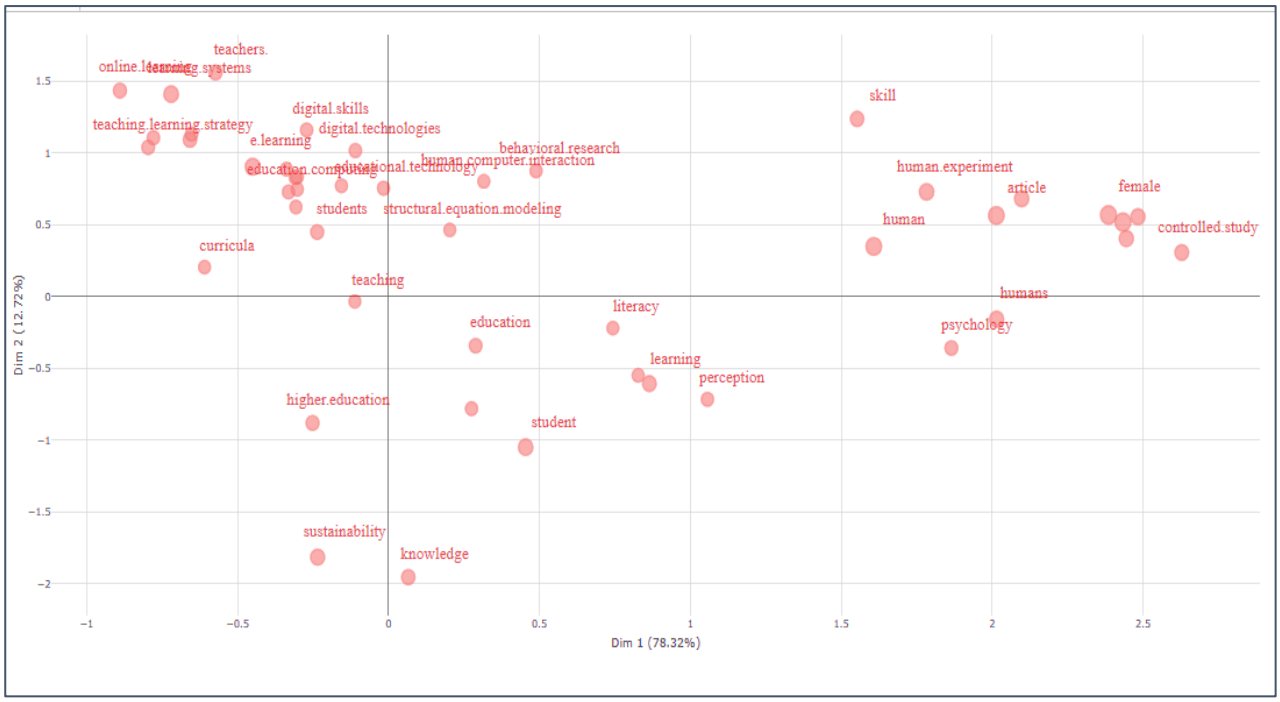

Figure 9. Factorial analysis

Betweenness Centrality: This metric measures the extent to which a node lies on the shortest paths between other nodes in the network. Nodes with high betweenness centrality, such as "bandura a. 1997" in Cluster 3 with a value of 446.16, act as crucial connectors within the network.

Closeness Centrality: Closeness centrality quantifies how close a node is to all other nodes in the network. Nodes with high closeness centrality, like "Scherer r. -1" in Cluster 4 with a value of 0.00775, can efficiently interact with other nodes in their cluster.

PageRank: This algorithm assigns a numerical weight to each node in the network based on the number and quality of incoming links. Nodes with high PageRank scores, such as "Scherer r. -2" in Cluster 4 with a value of 0.04591, are considered influential within their cluster.

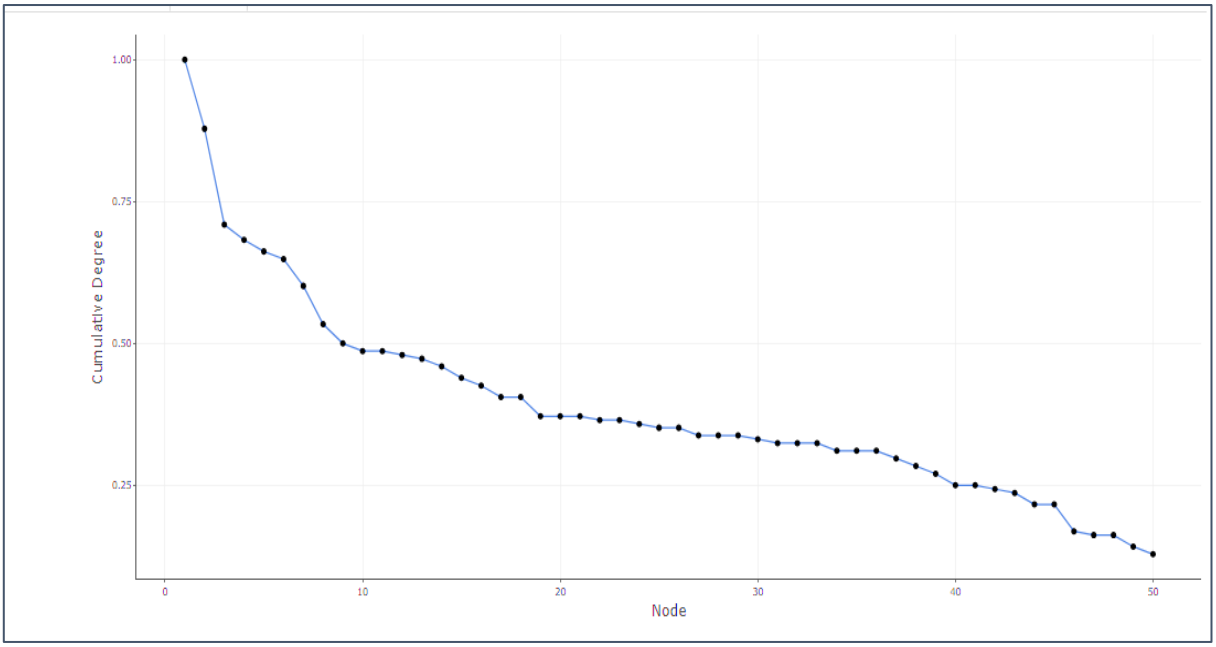

Figure 10. Co-citation Network

By examining these metrics across clusters, we can identify key nodes and understand their roles within their respective research domains. Additionally, outliers or nodes in clusters -1 and -2 might represent distinct topics or outliers within the dataset, warranting further investigation.

Research Discussion

This study delved into the world of research on assessing digital literacy skills in future teachers. The researchers, like detectives following a trail of clues, used a technique called bibliometrics to analyze a mountain of academic articles. Their investigation was driven by two burning questions:

The Power of Digital Literacy. Does having strong digital literacy skills affect how well a researcher's work gets published and recognized by others? The analysis revealed a surge in studies on testing these skills, highlighting a growing concern for ensuring future teachers are digitally fluent. The research community also displayed a strong spirit of collaboration, unsurprising given the multifaceted nature of digital literacy assessment in teacher education. Interestingly, a trend emerged: some countries and universities published more on the topic, while others garnered more citations for their work. This finding emphasizes the importance of both the quantity and quality of research – not just how much is published, but also how influential it is. Citation metrics act as a window into the impact of research, allowing us to see how much other researchers are using and building upon someone's work. In essence, this paints a vivid picture of a dynamic and collaborative research landscape, where valuable contributions flow from a diverse range of researchers, institutions, and nations across the globe.

Mapping the Landscape. The researchers took their analysis a step further by asking: Can we map where research on digital literacy skills testing is geographically concentrated? Here, they employed special mapping techniques to visualize the geographical spread and collaborative networks within the research community. This approach illuminated areas with high research activity and collaboration hotspots, revealing which institutions were working together the most. However, the benefits extended beyond simply identifying global trends and prolific institutions. The mapping also unearthed budding collaborative networks, fostering interdisciplinary connections that are crucial for advancing knowledge in this domain. It even pinpointed "research deserts," areas with limited scholarly activity. This knowledge is vital because it allows for targeted interventions and collaborative efforts to bridge these knowledge gaps and encourage wider research participation.

By incorporating spatial mapping techniques, the researchers gained a richer understanding of the global research landscape. Visualizing the geographical distribution of research activity provided valuable insights into trends, collaborative networks, and emerging research clusters. This knowledge empowers researchers to navigate the complex terrain of digital literacy assessment research with greater clarity and purpose.

Conclusion

In conclusion, this study serves as a beacon, illuminating the path toward a deeper understanding of how we evaluate digital literacy skills in aspiring educators. The findings depict a landscape brimming with burgeoning interest and collaborative spirit, where researchers, institutions, and nations are joining forces to unravel the intricacies of digital literacy assessment in teacher education. As the academic discourse on this topic continues to evolve, spatial mapping emerges as a powerful tool, not just for visualization, but also for fostering interdisciplinary collaborations that transcend geographical boundaries. This approach empowers researchers to identify research priorities, collaborative opportunities, and emerging trends, equipping them to navigate the complexities of digital literacy assessment research with renewed focus and direction. Ultimately, this study not only enhances our understanding of digital literacy assessment, but also lays a strong foundation for future explorations in this vital area of educational research, with the potential to inform policy, practice, and teaching methods for teacher education on a global scale.

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