



INNOVATIVE WORK BEHAVIOR LECTURERS: A BIBLIOMETRIC APPROACH IN HIGHER EDUCATION RESEARCH

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Abstract:

Innovative Work Behavior (IWB) among lecturers has become increasingly important in responding to rapid changes in higher education systems and academic demands. This study aims to map and analyze the development of research on lecturers' use of IWBs and to identify dominant themes and influencing factors within the existing literature. The study examines scholarly publications focusing on lecturers in higher education using a bibliometric approach. Data were retrieved from major scientific databases and analyzed using VOSviewer to examine publication trends, keyword co-occurrence, and author collaboration networks. The results show a gradual increase in IWB-related publications, with research clusters primarily focusing on organizational support, leadership, motivation, and academic innovation. However, the overall volume of studies remains limited and fragmented. This study contributes by providing a comprehensive bibliometric overview of lecturers' IWB research, highlighting research gaps and emerging themes. The findings offer practical implications for higher education institutions to design policies and interventions that foster innovative behavior among lecturers and guide future empirical studies.

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INTRODUCTION

Higher education faces global challenges, such as technological advancements, the need for relevant learning, and increasing international competition. To address these challenges, collective and innovative efforts from educators, the government, and the general public are essential (Handoko et al., 2022; Li et al., 2023; Pylianidis et al., 2021). Strengthening the innovation system in higher education is crucial through modern organizational structures and regulatory frameworks, internalizing an innovation culture in science and technology (IPTEK), and reinforcing education and human resource quality standards (Aldi et al., 2023; Gulo, 2021; Qu et al., 2022). These efforts facilitate productive interactions among various institutions, benefiting the education sector.

According to the Global Innovation Index (GII) 2024, published by the World Intellectual Property Organization (WIPO), Indonesia ranks 54th out of 133 countries. In Southeast Asia, East Asia, and Oceania, Indonesia ranks 12th out of 17 countries. One of the key indicators affecting this ranking is "Human Capital and Research," where Indonesia ranks 90th, reflecting the quality of universities and the overall education level of the population (Garcez et al., 2022; Juang et al., 2025). These findings highlight the

pressing need to enhance innovation capacity, particularly within the education sector, which is strategically important in human resource development. Thus, producing high-quality, innovative lecturers is imperative to inspire students and advance global progress.

Law No. 14 of 2005 on Teachers and Lecturers is a fundamental legal framework for ensuring lecturers' professionalism, welfare, and protection. As educators and researchers, lecturers are pivotal in fostering innovation in teaching, research, and community service (Oner et al., 2020; Otero, 2022). They are expected to deliver engaging learning experiences, encourage creativity, promote active participation, and support students' psychological and physical development, aligned with their talents and interests. Consequently, lecturers must continually develop their creative potential to support innovative teaching and learning (Rodrigues et al., 2024; Schwartz et al., 2025; Sukumaran, 2024). This highlights the necessity for lecturers to exhibit Innovative Work Behavior (IWB) to enhance educational quality.

Innovative Work Behavior (IWB) refers to individuals' behaviors within an organization that involve idea generation, idea development, and idea implementation in practical settings. A study by Ferdinand (2022) and Nur (2023) represents creative efforts in the workplace that contribute to organizational improvement. In the academic context, IWB among lecturers includes the ability to innovate in teaching methods, research initiatives, and community engagement in line with the Tri Dharma of Higher Education. Aulia et al. (2023), Amir (2022), Wedi et al. (2025) Moreover, say in their research that IWB is a critical factor in enhancing education quality through innovations in pedagogy, interdisciplinary research, technology-driven community service, and efficient academic management. Lecturers' IWBs significantly influence the quality of higher education. A study by Mittal et al. (2022) and Zakaria et al. (2025) found that innovative work behavior in idea development and task execution contributed 48% to student satisfaction at Banten Shipping Polytechnic. However, the study also indicated that lecturers' IWB alone is not a dominant factor in student satisfaction, suggesting the presence of other influencing variables. These findings underscore the importance of lecturers' use of IWBs in higher education while revealing gaps in their impact on academic outcomes.

This study aims to conduct a bibliometric analysis of research on lecturers' use of IWBs in higher education by mapping the existing literature, identifying research trends, and examining influential factors. By leveraging bibliometric tools such as VOSviewer, this study provides an overview of the academic landscape on lecturers' IWBs, offering insights for future research and policy development. The findings will serve as a valuable reference for higher education institutions, policymakers, and educators in designing strategies to cultivate a culture of innovation among lecturers, ultimately improving the quality of higher education globally.

The original contribution of this study lies in its comprehensive bibliometric approach to analyzing research on lecturers' Innovative Work Behavior (IWB) in higher education. This area has received limited attention in existing literature. While prior studies have explored general organizational innovation and its impact on education, they often lack a systematic mapping of research trends, collaboration networks, and key determinants specific to lecturers' use of IWBs. By utilizing bibliometric tools such as VOSviewer, this study uniquely contributes to the academic discourse by identifying influential authors, prominent research themes, and citation patterns related to IWB

among lecturers. Moreover, it fills a critical gap by highlighting the evolving intellectual structure of IWB research and offering empirical insights to inform policy development and institutional strategies for fostering innovation in higher education. The study's findings will provide a deeper understanding of how IWB shapes educational quality and serve as a foundation for future interdisciplinary research, ultimately advancing higher education globally.

RESEARCH METHOD

This study employs a bibliometric approach to systematically analyze existing literature on lecturers' Innovative Work Behavior (IWB) in higher education (Kurniasari et al., 2024). Given the increasing importance of IWB in enhancing educational quality, this study aims to map research trends, identify key contributors, and explore influential factors in this domain. Bibliometric analysis is particularly well-suited for understanding the academic landscape by providing insights into the evolution of research, collaboration patterns among scholars, and the field's thematic structure.

Data were collected from reputable scientific databases, including Scopus, Web of Science (WoS), and Google Scholar, ensuring comprehensive coverage of peer-reviewed journal articles and conference proceedings. The search was conducted using carefully selected keywords, including "innovative work behavior," "lecturers," "higher education," and "academic innovation," to retrieve relevant publications. The inclusion criteria focused on studies published in English, with particular emphasis on those that directly addressed lecturers' use of IWBs in higher education settings. Data cleaning and filtering were performed to eliminate duplicate records and ensure the accuracy of the bibliometric analysis.

For data analysis, this study used VOSviewer, a bibliometric software widely used to visualize research trends and academic networks. (Arhesa et al., 2024). The software facilitated co-authorship analysis, co-citation mapping, and keyword co-occurrence analysis to identify research clusters and collaboration patterns. The results of this bibliometric study are expected to provide a comprehensive overview of the development of lecturers' IWB research, highlighting key research gaps and future directions for scholars and policymakers in higher education.

RESULTS AND DISCUSSION

Result

The findings indicate that lecturers' Innovative Work Behavior in higher education remains an emerging and fragmented research area. Bibliometric analysis identifies seven research clusters. Ethical leadership, work engagement, psychological safety, and organizational support strongly shape innovation, whereas burnout and weak research networks hinder lecturers' capacity for innovation across teaching, research, and community service.

Bibliometrics

The bibliometric approach is a quantitative method for analyzing scientific literature, publications, and related data. This approach uses bibliometric indicators, such as the number of publications, citations, and patterns of author collaboration, to identify trends, patterns, and relationships within a field of study. This method uses bibliographic data, such as reference lists, citations, and citation indexes, to gather information about

scientific publications, journals, or other research projects. This method can also be used to observe current trends and relationships in scientific research.

The IWB publications of this lecturer are from 2022-2024, from Scopus, and then using VOSviewer, which has three features: network visualization, overlay visualization, and density visualization. VOSviewer is a tool designed to create, visualize, and analyze data using bibliometric analysis. In this study, VOSviewer software was used to analyze, visualize, and assess information that is relevant to this topic. The information includes occurrences of bibliography, country, institution, journal, and keyword. Researchers obtained 453 journal articles from Scopus about IWB, lecturers, higher education, and academic innovation. After being reviewed on VOSviewer, 58 articles related to IWB were identified from 453 journal articles, which is significant for bibliography searching. As for network visualization in the bibliography, namely:

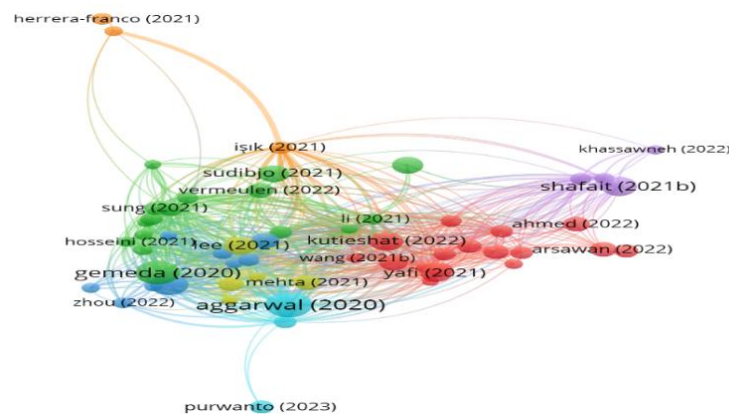


Figure 1.1 Visualization of the IWB Lecturers' bibliography network

Figure 1 presents a bibliometric network comprising seven distinct research clusters, with 57 items in total. Cluster 1 is the largest, containing 17 items, followed by Cluster 2 with 16 items and Cluster 3 with nine items. Cluster 4 comprises five items, while Cluster 5 includes four items. The smallest groups are Cluster 6 and Cluster 7, each consisting of three items, indicating more specialized and emerging research themes.

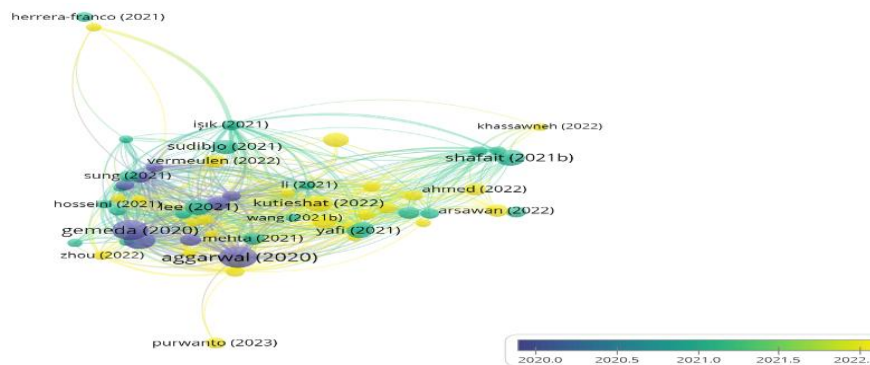


Figure 1.2 Visualization of the IWB Lecturers' bibliography overlay

Figure 2 illustrates an overlay visualization of the literature on lecturers' Innovative Work Behavior. The yellow nodes indicate more recent publications, primarily from 2022–2023, reflecting current research interest. In contrast, the purple nodes represent earlier studies published around 2020, highlighting the temporal development and evolution of research themes in this field.

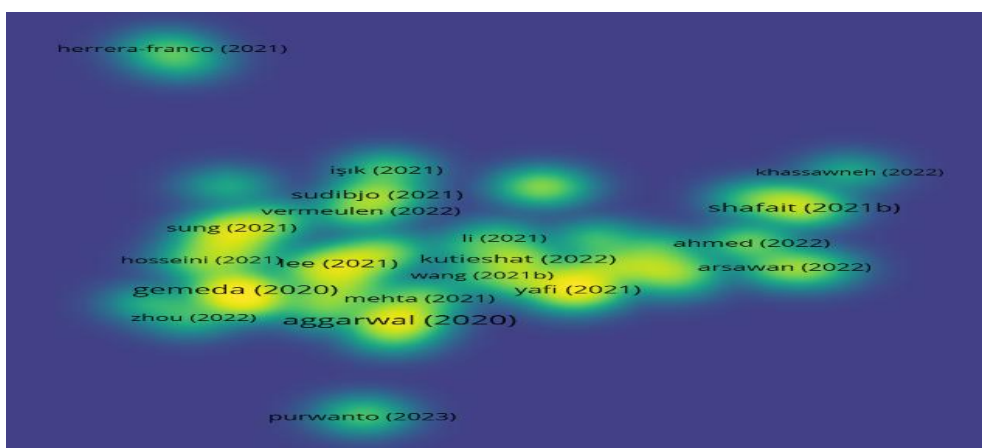


Figure 1.3 Visualization of IWB Lecturer's Bibliographic Density

Figure 3 presents a density visualization of the lecturers' Innovative Work Behavior bibliography. Elements shown in bright yellow indicate areas of high density, representing topics supported by a large number of significant, frequently cited publications. These areas reflect well-established research themes within the IWB literature. In contrast, elements displayed in green or blue represent low-density areas, indicating fewer publications and lower research intensity. Such patterns suggest that while specific IWB topics have gained substantial scholarly attention, others remain underexplored and offer opportunities for future investigation.

Based on this analysis, it can be concluded that lecturers and researchers can use various bibliometric software tools to identify relevant IWB literature and references efficiently. These tools facilitate faster and more systematic access to academic sources, supporting comprehensive literature reviews. However, the density results indicate that research on lecturers' Innovative Work Behavior remains limited and unevenly distributed. This suggests that the field is still developing and requires further empirical studies to strengthen theoretical foundations and expand scholarly discourse.

Factors Influencing Lecturers' IWB

The factors influencing lecturers' Innovative Work Behavior are identified through a selected and analyzed body of literature. Based on the bibliographic analysis conducted in this study, 12 key references were examined. These sources provide empirical and theoretical insights into the various individual, organizational, and contextual factors that shape lecturers' capacity to engage in innovative activities within higher education.

Table 2.1 Factors Influencing Lecturers' IWB

Writer	Methodology	Indicators/Dimensions	Factor
Hosseini (2021)	Quantitative type with survey method	Indicators: 1) Ideas are Generated, 2) Opportunities are Created, 3) Ideas are Championed, and 4) Ideas are Realized.	Factors that influence, namely: 1. Learning organization 2. Work engagement
Liu et al. (2023)	Quantitative type with survey method	Indicators: 1) Ideas are Generated, 2) Opportunities are Created, 3) Ideas are Championed, and 4) Ideas are Realized.	Factors that influence, namely: 1. Ethical Leadership 2. Psychological Safety 3. Work Engagement

Işık et al. (2021)	Quantitative type with survey method	Dimensions : Exploration of ideas, generation of ideas, defense of ideas, and implementation of ideas	Factors that influence, namely: 1. <i>Team culture</i> 2. <i>Knowledge Socialization</i> 3. <i>Knowledge Externalization</i>
Aryani et al. (2024)	Quantitative type with survey method	Indicators: Exploration of Opportunities, Generativity, Informative Investigation, Championing, and Application	Factors that influence, namely: 1. The relationship between creativity 2. Teaching self-efficacy 3. Affective commitment
Xu & Suntrayuth (2022)	Quantitative type with survey method	<i>Generating, Promoting, and Realizing Novel Ideas</i>	Factors that influence, namely: 1. <i>Organizational Innovation Climate</i> 2. <i>Psychological Safety</i> 3. <i>Knowledge Sharing</i>
Ali et al. (2022)	Quantitative type with survey method	Indicators: 1) Ideas are Generated, 2) Opportunities are Created, 3) Ideas are Championed, and 4) Ideas are Realized.	Factors that influence, namely: 1. <i>Employee Engagement</i> 2. <i>Work-life Balance</i> 3. <i>Psychological Empowerment</i>
Gkontelos et al. (2022)	Quantitative type with survey method	Indicators: Idea Generation, Exploration, Promotion, and Implementation	Factors that influence, namely: 1. <i>Irrational Beliefs</i> 2. <i>Self-Efficacy</i> 3. <i>Burnout</i>
Fiernaningsih et al. (2023)	Quantitative type with explanatory and survey methods	Indicators: 1) Ideas are Generated, 2) Opportunities are Created, 3) Ideas are Championed, and 4) Ideas are Realized.	Factors that influence, namely: 1. <i>Employee Performance</i> 2. <i>Work engagement</i>
Ferdinand (2022)	Quantitative type with explanatory and survey methods	Indicators: 1) Ideas are Generated, 2) Opportunities are Created, 3) Ideas are Championed, and 4) Ideas are Realized.	Factors that influence, namely: 1. <i>Organizational Culture</i> 2. <i>Lecturer Performance</i>
Fiernaningsih et al. (2022)	Literature survey method	Indicators: 1) Ideas are Generated, 2) Opportunities are Created, 3) Ideas are Championed, and 4) Ideas are Realized.	Factors that influence, namely: 1. <i>Transglobal Leadership</i> 2. <i>Organizational Support</i> 3. <i>Proactive Personality</i> 4. <i>Work Engagement</i> 5. <i>Employee Performance</i>
Nugroho et al. (2023)	Quantitative type with survey method	Dimensions: Concept Generation, Concept Investigation, Idea Support, and Idea Execution	Factors that influence, namely: 1. <i>Transformational Leadership</i> 2. <i>Knowledge Distribution</i>
(Putra et al., 2022)	Quantitative type with survey method	Indicators: Exploration of ideas, development of new ideas, analysis, environmental implications, and implementation of new ideas.	Factors that influence, namely: 1. <i>Psychological Empowerment</i> 2. <i>Intergenerational learning</i> 3. <i>Age diversity climate</i>

Based on Table 1, the factors influencing lecturers' Innovative Work Behavior (IWB) can be classified into individual, interpersonal, and organizational dimensions. Individual factors include psychological empowerment, self-efficacy, proactive personality, creativity, work engagement, and work–life balance, which reflect lecturers' internal motivation, cognitive resources, and personal capacities to engage in innovative activities. Interpersonal factors, such as ethical leadership, transformational leadership, team culture, knowledge socialization, knowledge sharing, and intergenerational learning, highlight the role of leadership practices and social interactions in fostering a supportive environment for innovation. Meanwhile, organizational factors, including learning organization, organizational innovation climate, organizational culture, organizational support, and age diversity climate, function as structural enablers that shape opportunities and constraints for lecturers' innovative behavior.

In terms of behavioral manifestations, lecturers' IWB is represented by interconnected indicators: idea generation, idea exploration, idea championing, idea realization, and idea implementation. These indicators illustrate that innovation among lecturers is a dynamic and sequential process rather than a single action, beginning with the creation and exploration of ideas and continuing through advocacy and practical application. The integration of influencing factors across individual, interpersonal, and organizational levels suggests that lecturers' IWB emerges from the alignment of personal readiness, supportive social relationships, and conducive institutional systems, ultimately contributing to improvements in the quality of higher education.

Discussion

The bibliometric analysis conducted in this study provides significant insights into the research trends on lecturers' Innovative Work Behavior (IWB) in higher education. Identifying 453 journal articles in Scopus, of which 58 are directly relevant to IWB, highlights the limited yet growing scholarly attention to this topic. The network visualization reveals seven clusters of research focus, demonstrating that studies on lecturers' IWB are diverse but fragmented. The overlay visualization indicates that recent publications (2022–2023) have started addressing emerging aspects of IWB in academia, while earlier research (2020) focused on foundational theories (Malik, 2023; Melati et al., 2023). The density visualization suggests that specific themes, such as academic innovation and interdisciplinary collaboration, have received more significant attention than others. These findings imply that, despite growing scholarly interest, lecturers' use of IWBs remains underexplored in higher education, necessitating further investigation into their determinants and implications for institutional performance.

The bibliometric correlations reveal the relationships between authors, institutions, and research themes. The co-authorship analysis suggests that research on IWB is highly decentralized, with relatively weak collaboration among scholars from different institutions (Aminy et al., 2021; Erma et al., 2023). This indicates that the topic is still emerging and lacks a strongly connected research community. The co-citation analysis shows that while some seminal works have shaped the discourse, there is no single dominant framework governing lecturers' use of IWBs. The keyword co-occurrence analysis highlights that IWB is often studied alongside educational innovation, leadership, and digital transformation, suggesting it is perceived as an enabler of academic progress (Nuzzo, 2024; Hasanah, 2024). These correlations reinforce the argument that lecturers' use of IWBs is integral to enhancing educational quality. Still, the lack of structured

theoretical foundations and inter-institutional collaboration limits its full academic potential.

Identifying 24 key influencing factors and five primary IWB indicators provides a comprehensive framework for understanding the drivers of lecturers' use of IWBs in higher education. The most significant factors are learning organization, ethical leadership, psychological safety, organizational culture, and knowledge sharing, all of which are closely tied to institutional and environmental support systems (Baharun, 2023; Bunyamin, 2024). The presence of work engagement, transformational leadership, and proactive personality as critical factors suggests that individual motivation and institutional policies jointly contribute to fostering IWB (Bali, 2024; Mochón, 2021). These findings have substantial practical implications, as they suggest that higher education institutions must adopt a holistic approach that incentivizes individual creativity and builds a supportive organizational culture that encourages continuous knowledge exchange and interdisciplinary collaboration. Without such an approach, efforts to promote IWB may be fragmented and less practical.

The correlations among these factors highlight the interplay between personal attributes, organizational support, and institutional policies in shaping lecturers' IWB. Ethical leadership, work engagement, and psychological empowerment strongly influence IWB, creating an environment conducive to risk-taking and creative problem-solving (Hidayah, 2024; Karakaya et al., 2023). Meanwhile, knowledge socialization and team culture act as mediators, enabling individuals to translate their innovative ideas into tangible academic contributions (Abdullah, 2024; Honda et al., 2023; Sain, 2025). Burnout and irrational beliefs as negative factors suggest that while fostering IWB is crucial, it must be balanced with psychological well-being to avoid counterproductive effects. Ultimately, these relationships emphasize that IWB in lecturers is not solely an individual trait but rather a function of systemic institutional support and leadership strategies that prioritize innovation as a core academic value.

From a theoretical perspective, the findings of this study contribute to the literature on Innovative Work Behavior (IWB) in higher education by offering an integrative framework that combines individual, interpersonal, and organizational dimensions. The identification of five core IWB indicators, idea generation, idea exploration, idea championing, idea realization, and idea implementation, supports the view of IWB as a dynamic and process-oriented construct rather than a static behavioral outcome. This extends prior theoretical models that often emphasize isolated innovation stages by demonstrating how these indicators function sequentially and interactively within academic contexts. Furthermore, the mapping of 24 influencing factors underscores the need to adopt multilevel theoretical approaches to explain lecturers' IWB, reinforcing perspectives from social exchange theory, organizational support theory, and psychological empowerment theory. By synthesizing fragmented bibliometric evidence, this study helps clarify conceptual boundaries and provides a structured foundation for future empirical testing and theory development.

From a practical perspective, the results offer actionable insights for higher education leaders and policymakers seeking to foster lecturers' innovative behavior. Institutions are encouraged to strengthen learning organization practices, cultivate ethical and transformational leadership, and ensure psychological safety to create environments conducive to innovation. Policies that enhance work engagement, knowledge sharing, and intergenerational learning can further support the translation of

ideas into impactful academic practices. At the same time, attention to burnout, work–life balance, and psychological well-being is essential to sustain innovation over time. By aligning leadership strategies, institutional policies, and individual development programs, higher education institutions can more effectively leverage lecturers’ IWBs as a strategic resource to improve educational quality, research productivity, and institutional competitiveness.

CONCLUSION

This study provides significant insights into the Innovative Work Behavior (IWB) of lecturers in higher education through a bibliometric analysis of research trends, collaboration networks, and influencing factors. The findings highlight the growing academic interest in IWB while revealing gaps in theoretical frameworks and empirical research. A major takeaway is that lecturers’ IWB is crucial for fostering innovation in teaching, research, and community service, directly contributing to institutional development and global academic competitiveness. By identifying 24 key influencing factors and five primary indicators of IWB, this study offers a comprehensive framework for future research and institutional policy-making. The research contributes to higher education management strategies, providing evidence-based recommendations on how universities can cultivate a culture of innovation among lecturers. The practical implications of this study underscore that leadership, organizational culture, and psychological empowerment are essential for sustaining a dynamic, innovative academic environment.

Despite its valuable contributions, this study has several limitations. First, the bibliometric analysis is restricted to publications indexed in Scopus, excluding non-indexed but potentially relevant studies from regional and institutional repositories. Second, while this study identifies key factors influencing lecturers’ IWB use, it does not empirically validate the causal relationships among them. Future research should employ quantitative and qualitative methodologies, such as longitudinal studies and experimental designs, to assess the direct and indirect effects of these factors on IWB. Expanding the scope to include cross-country comparisons could offer a global perspective on best practices in fostering IWB among lecturers. Lastly, given the influence of technological advancements on academic innovation, future studies should explore how digital transformation, artificial intelligence, and online learning environments affect lecturers’ use of IWBs and institutional innovation in higher education.

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