



The role of intellectual stimulation on students creativity improvement in higher education: A systematic literature review



 Nonye Chukwuma ^{(a)*}  Robert -Walter Dumisani Zondo ^(b)

^(a) *Entrepreneurial Studies and Management, Faculty of Management Sciences, Durban University of Technology*

^(b) *Professor, Head of Department, Entrepreneurial studies and Management, Faculty of Management Sciences. Durban University of Technology*

ARTICLE INFO

Article history:

Received 30 July 2024

Received in rev. form 16 Sept 2024

Accepted 10 October 2024

Keywords:

Intellectual stimulation, students' improvement, teaching and learning, higher Education, creativity, transformative leadership skills

JEL Classification:

O15

ABSTRACT

In Higher Education, intellectual stimulation as a key aspect of transformational leadership, plays a vital role in fostering creativity and critical thinking among students. Several efforts have been made to improve students' creativity in teaching and learning. Intellectual stimulation in Higher Education plays a significant role in fostering keen interest for learning and preparing students for future challenges. It creates a dynamic educational experience that benefits both the educators and students. However, there are still many institutions that have not optimized their students' capacity development. For this reason, intellectual stimulation is considered as a strategic means for the improvement of creativity in education. All over the world, educational institutions encourage transformative teaching and learning skills design so as to implement a shift from the traditional pedagogy and be more creative with their teaching activities. Nevertheless, teaching and learning accomplishments in Higher Education are often faced with the challenge of resistance to change which slows down the improvement of students' creativity improvement. This study comprises a systematic literature review using PRISMA approach to track related researches on the role of intellectual for the improvement of creativity in teaching and learning in Higher Education. The study defines the concept of intellectual stimulation and creativity in teaching and learning. The significance of intellectual stimulation in Higher Education is to enhance teaching strategies, influence policies and guide future research by providing a clear and impactful contribution through the promotion of active learning, encouraging student feedback on their thinking processes, directing funding towards innovative teaching methods and technologies that enhance intellectual stimulation in order to build supportive learning environments and finally, policy makers can use findings on intellectual stimulation to advocate for curricula that emphasizes problem solving, creativity and real world application. Results obtained indicate that intellectual stimulation plays a crucial role in improving students' creativity. Findings from the study can be linked to potential policy changes for enhancing educational practices and improving education policies serving as advocates for inquiry-based learning and critical thinking skills. The potential contribution of this review study will prompt educators to encourage questioning, introduce diverse learning activities such as group projects and case studies, critical thinking exercises, foster a growth mindset in students, connect to real world issues.

© 2024 by the authors. Licensee Bussecon International, Istanbul, Turkey. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution 4.0 International license (CC BY) (<http://creativecommons.org/licenses/by/4.0/>).

Introduction

Despite the growing recognition of intellectual stimulation's value in education, there is limited research on its direct contribution to fostering student creativity in Higher Education, particularly in relation to leadership practices. Intellectual stimulation is an attribute of transformational leadership which fosters critical thinking, problem solving skills and creativity amongst members (Ibrahim, Ismail, Mat & Erhan, 2023). Intellectual stimulation is considered a critical skill by educators in Higher Education for improving creativity in teaching and learning exercises (Han & Abdrahim, 2023). This study explores the application of intellectual stimulation for improving students' creativity in Higher Education. Student creativity can be influenced by various factors, including encouraging student feedbacks, student teaching methods, supportive learning environment, introduction of problem solving curricula and creating an overall collaborative environment for teaching and learning (Fan & Cai, 2022). According to Han and Van (2020), not meeting

* Corresponding author. ORCID ID: <http://orcid.org/0000-0002-0508-5723>

up with the consideration of these factors, results in inadequate application of intellectual stimulation further distorting staff and students' creativity improvement in Higher Education.

Chowdry and Osowska (2017), mentions that Higher Institutions face challenges such as work pressure, overcrowded classes, inadequate student supervision, inefficient training opportunities and teaching resources. These challenges contribute to more stress, demotivation, low team spirit and poor staff performance (Saeed, Ullah & Ahmad, 2020). This can further result in discouragement, misconduct, inappropriate behavior and absenteeism in students if these challenges are not properly handled (Agyekum, 2023). Related studies conducted by different researchers emphasise the vital role of intellectual stimulation for improving students' creativity and making teaching and learning more engaging, interesting and insightful for students. Research investigations by several scholars indicated a positive correlation between intellectual stimulation and teaching enhancement, motivation, creativity, and institutional management (Henriksen, Richardson & Shack, 2020; Han & Abdrahim, 2023). Ikedimma and Okorji (2023) also recognize the significance of intellectual stimulation in Higher education management towards creative innovation and critical thinking by resolving the problems concerning staff satisfaction. Higher Education policies highlight the need for school leaders to possess knowledge in education, administration, management and supervision (Almulla, 2023). On the other hand, intellectual stimulation as a factor of leadership management contributes greatly to student creativity improvement in Higher Education which aligns to the policies of Higher Education (Agyekum, 2023). However, there are certain concerns affecting the application of intellectual stimulation in addressing students' creativity.

The purpose of this study is to investigate the contribution of intellectual stimulation on the improvement of students' creativity in Higher Education. Abakah (2023) suggested several ways students can be intellectually stimulated in teaching and learning such as incorporating active learning techniques through problem solving skills, encouraging critical thinking and exploration of ideas which enhances the exploration of ideas and articulation of thoughts, encouraging group projects to broaden students perspectives and also stimulate their creative thinking to promote connections between diverse fields facilitate collaborative learning allowing students learn from each other to enhance their understanding and encourage diverse perspectives; incorporate diverse interactive learning tools through online discussion forums to provide engagement, encourage students to ask questions and conduct their own research in order to take ownership of their learning and be self -empowered; Invite professionals to share their experiences and insights so to inspire students ; encourage students to maintain reflective practices by journaling their learning experiences; employing different assessment methods such as presentations, projects, portfolios, to allow students demonstrate their understanding in different ways. These strategies will facilitate interpersonal group discussions and enhance communication skills and engagements as well as improve problem solving skills.

Intellectual stimulation as a teaching skill provides educators opportunities for academic and professional development which can be organized by means of continued professional development sessions, stimulating workshop engagements to enhance intellectual creativity (Saroyan & Frenay, 2023). Since it is important that the management in higher education move towards a sustainable practical development as envisaged by United Nations in 2023, there is need for management to initiate expected visions towards a desired objective to encourage collaborative engagements between staff and students in Higher Education as well as find solutions to contemporary issues that could transform and upgrade the mindsets of staff in Higher Education (Hill & Smith, 2023). This implies that the need for intellectual stimulation as a management leadership skill is critical in the 21st century and should be considered as an appropriate skill for encouraging creativity, collaboration and innovative problem solving skills between staff and student in Higher Education (Kavitha, Saima & Sahana, 2024).

Lack of creativity on the side of staff or educators in Higher Education has been linked to the inadequate application of intellectual stimulation. This is because the management and staff lack the necessary skills required to improve students' creativity (Bukati, Ndaita & Matere, 2024). This further hinders professional growth, lack of innovation and an uncondusive environment for enhancing student creativity through teaching and learning activities (Agyekum, 2023). The inappropriate application of intellectual stimulation has been linked to poor staff performance, low student creativity, and diminished commitment. This emphasizes the need for skilled leadership in fostering creativity through innovative teaching (Kavitha, Saima & Sahana, 2024)).To address this challenge, this study investigates how the effective application of intellectual stimulation by management and educators can enhance student creativity in Higher Education.

A study conducted by Khaola and Oni (2020) focused on intellectual stimulation as means to improve teachers' innovation, creativity, commitment, productivity and conducive environment for learning. It was noted that these studies lacked the critical factor of intellectual stimulation which is a vital contributor to improving students' creativity through teaching and learning. This indicates the need to address the unresolved concern of improving students' creativity through the practical application of intellectual stimulation as a leadership management skill. Therefore, this study investigates the contribution of intellectual stimulation on students' creativity in Higher Education.

How does intellectual stimulation improve students' creativity through teaching and learning in Higher Education?

The study provides insights on the role of intellectual stimulation played out by the management staff in Higher Education to improve students' creativity in teaching and learning.

Literature Review

Exploring the role of intellectual stimulation on students' creativity in higher education

This study is founded from the theory of transformational leadership by James Burn (1978). Transformational leadership is a process whereby leaders and followers assist one another to improve on set goals through motivation and inspiration. The theory focuses on the need for leaders or management of an organization to motivate organizational members to pursue the interest of the organization going beyond their self-interest through intellectual stimulation which is a construct of transformational leadership (Shin & Bolkan, 2021).

According to Kwan (2020), linking transformational leadership to student creativity improvement in the context of intellectual stimulation could be presented as follows; First, transformational leaders are known for inspiring visions for learning that emphasizes creativity and innovation. This vision motivates students to pursue creative endeavors in engaging more fully with teaching and learning activities. Secondly, transformational leadership skills empowers students by providing them with autonomy of learning which encourages students to explore their interests, leading to increased creativity and ownership of their projects. The autonomy of learning encourages enhances creativity as well as demonstrates diversity in the expression of unique ideas and approaches. In addition to this, transformational leadership skills promotes collaboration among students which fosters a creative community, resulting in innovative solutions and ideas. Intellectual stimulation as a construct of transformational leadership in Higher Education, significantly impacts creativity. It serves as means of creating an environment conducive to exploration, exploration, and collaboration, thereby, creating a dynamic ecosystem that nurtures creativity in students, preparing them for the complexities of the modern world (Al-Awamleh, 2020).

Mbune, Waweru and Njuguna (2024) emphasized on the need for intellectual stimulation for the management of skills that enhance critical thinking, innovation and creativity for teaching and learning activities in Higher Education. Intellectual stimulation as an aspect of transformational leadership in Higher Education has portrayed a constellation of behaviors which include the ability of the management to inspire staff, work with them individually and encourage creative efforts to problem solving which staff could inculcate into teaching and learning (Han & Van, 2020; Mbune, Waweru & Njuguna, 2024;). Research investigation by Sarmiento and Riana (2024) indicated that intellectual stimulation correlates with traditional learning outcomes through affective learning, motivation, problem solving, and staff and student engagement. The findings suggested that the reasons intellectual stimulation results in the improvement of students' creativity in Higher Education is due to the relationship between transformational leadership theory with motivation, innovation and creativity (Bass, 1985; Bass & Riggio, 2006; Sarmiento and Riana, 2024). Some studies suggest that the impact of intellectual stimulation on students' creativity leads to a more engaging and collaborative environment for teaching and learning in Higher Education (Shin & Bolkan, 2021; Sarmiento and Riana, 2024).

These skills are crucial for the management as it makes it easier for them to identify the challenges that staff in Higher Education are facing with regards to improving creativity in students' teaching and learning activities (Jacob, Jegede & Musa, 2021). The transformational leadership theory has always served as an effective leadership management style in most successful organisations and is employed in this study because of its attribute of intellectual stimulation which could be applied in schools to encourage students' creativity (Supena, Darmuki & Hariyadi, 2021). Transformational leadership theory focuses on the attributes of the management as leaders and it is considered in this study to assess the various means in which staff in Higher Education could practically apply its major attribute which is intellectual stimulation (Al-Mamary, 2021).

According to Chowdry and Osowska (2017), students' creativity are inspired by actions intrinsically motivated by their educators. This requires reinforcements by the management through active engagement with activities staff find interesting which in turn, motivates staff and promote creativity in teaching and learning. This in turn, further encourages students' engagement and active participation in teaching and learning. Other literature studies on intellectual stimulation in Higher Education revealed suggested stimulators of improving students' creativity which include positive behavior motivators, empowerment and self-development. Intellectual stimulation is very crucial for teaching and learning as it plays a salient role in students' general performance (Al-Mamary, 2021; Han & Abdrahim, 2023).

Han and Abdrahim (2023) concluded that when students' creativity is improved, there are more deeply engaged and interested with their studies applying critical thinking and problem solving as means to gain mastery in self-development and improvement. Intellectual stimulation has also been linked to cognitive engagement and strategic means for effective student engagement. Hahm and Chen (2020) also suggests that intellectual stimulation has the potential to stimulate students' use of effective studying patterns and methods reflecting students' basic approaches to their school work based on a deep or surface level. The understanding of how students approach their studying is critical and research has demonstrated quality learning outcomes with the application of intellectual stimulation by the management and staff in Higher Education (Guo, Yang, Zhang and Gan (2022).

Research and Methodology

The study considers the review of empirical studies related to the role of intellectual stimulation on the improvement of students' creativity in teaching and learning. Based on the 5 steps PRISMA process of conducting a literature review as mentioned by Sauer and Seuring (2023), involves the following steps:

i. Identifying the research question:

This step recommends the identification of the broader definitions of the study, the population, intervention and most importantly, the contextual aspect of the study. This will ensure the accomplishment of a robust study coverage through the search process methods employed. The research question for this study indicates "How does intellectual stimulation improve students' creativity through teaching and learning in Higher Education?"

ii. Identification of relevant studies

The main key words identified for the study were as follows: intellectual stimulation, student creativity, teaching and learning, and Higher education. The DUT data bases, web of site, scopus, and the google scholar were search engines considered for the study to ensure the quality, precision and clarity of the study is achieved. All articles published between 2017-2024 were considered relevant for the literature search.

iii. Study selection criteria

The selection of studies was initially conducted in January 2024 and updated in September 2024 to get hold of very current information around the study. A systematic literature search strategy was employed to ascertain the relevance of selected databases, scope of literature covered and key words used for the literature search. Next, duplicates in the study were extracted after the selection process conducted as well as studies found not to be aligned to the study. By so doing, the inclusion criteria and exclusion criteria resulted to a final list of related titles generated and shared for further screening and evaluation by various authors. Mapping out the inclusion and exclusion criteria were founded upon the research question. With the application of PRISMA, the selection process was presented indicating the extraction of the inclusion criteria.

iv. Collating and Presentation of Result

The use of PRISMA was employed for collating and summarizing presented result indicating related research titles founded from the key words, phrases or variables of the study. This process included: the collation of records after search; screening of duplicates; extractions of irrelevant abstracts; exclusion of articles that are illegible; exclusion of articles with reasons; included articles.

v. Inclusion of Selected Studies.

Involves the assessment of studies included for this study undertaken.

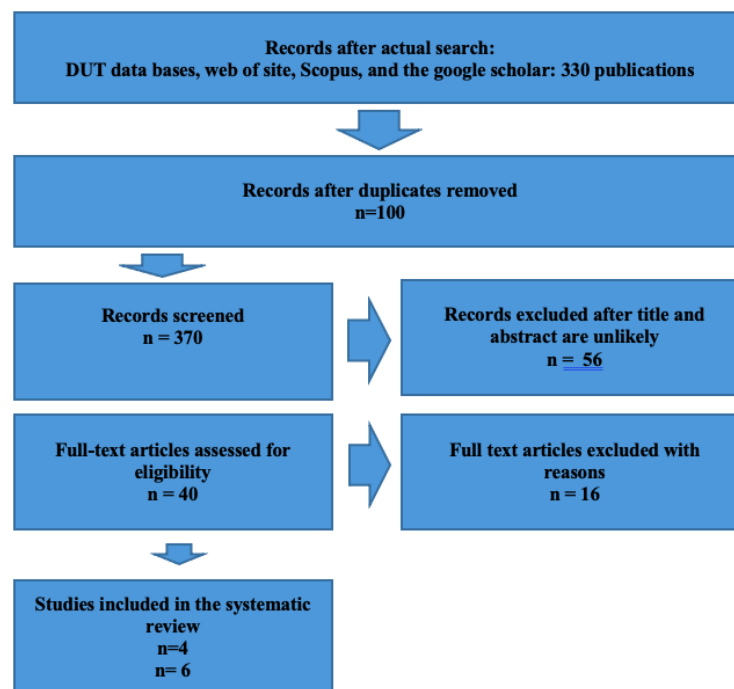


Figure 1: The 5 steps PRISMA Process

Table 1: Characteristics of the included studies

Author/ Title	Study Design/Sample Setting	Instruments/ Methods employed/ Statistical Analysis	Main Findings
Chowdhry, S. and Osowska, R., 2017 In search of intellectual stimulation: understanding the relationship between motivation, deep learning and stimulation in the higher education classroom.	Quantitative studies. Collected through questionnaires. The sample comprised 128 students from Edinburgh Napier University, Scotland.	The survey findings showed a positive correlation and positive agreement between the intellectual stimulation (IS), intrinsic motivation (IM) and deep learning approach (DLA) scales.	The findings suggest the design of an intellectually stimulating environment in HE classroom, should consider students' learning styles, challenge students, allow the provision of timely feedback and provide opportunities to encourage independent thought.
Thuan, L.C., 2020. Motivating follower creativity by offering intellectual stimulation.	Quantitative studies. Collected through questionnaires comprising of 415 respondents.	This study used structural equation modeling (SEM) to analyze the gathered data.	This study found a positive direct relationship between leader intellectual stimulation and follower creative performance.
Mbune, B., Waweru, S.N. and Njuguna, F.W., 2024. Principals' Intellectual Stimulation Practice: Empowering Adoption of ICT in Teaching and Learning in Kenyan Public Schools.	A sequential explanatory mixed method design and focused on 62 school principals chosen through census, 186 teachers, and 372 students selected using a simple random sample process.	Data was collected using MLQ-structured questionnaire interviews, document analysis, and checklists. Descriptive analysis was used to explain the patterns in the data and the status of variables, while inferential analysis was used to evaluate the relationship between the variables using regression analysis.	The study found a moderately substantial positive correlation between ICT use in school and intellectual stimulation $r(108) = 0.534, p < 0.001$. It was discovered that principals' actions were a significant predictor of ICT adoption in secondary schools; therefore, principals were recommended to foster a culture of trust among teachers by establishing a welcoming workplace
Sarmiento, A. and Riana, I.G., 2024. Lecturer performance in higher education: transformational leadership, knowledge sharing, change adaptability and its relationship	The research was conducted at Universidade Nacional Timor Lorosa'e (UNTL) with a sample of 201 lecturers.	The data that has been collected is analysed with descriptive and inferential analysis of Smart PLS.3.	The results showed that transformational leadership has a significant effect on knowledge sharing and lecturer performance. Knowledge sharing has a significant effect on lecturer performance.

Conclusion

The purpose of this study was to assess the role of intellectual stimulation on the improvement of students' in Higher Education. Intellectual stimulation was seen to possess attributes that influenced students' general performance in terms of creativity between the years 2017-2024. It was pointed out that most management decisions that indicated clear communication and interactions with the interest of both staff members and students respectively, ensured better student performance and improved creativity. Another study's findings indicated that the practice of intellectual stimulation by the management of Higher Education determined a safe and collaborative environment for both staff and students to engage effectively in teaching and learning activities.

Based on the findings from the reviewed studies, a detailed understanding on the role of intellectual stimulation on the improvement of students in Higher Education, the following recommendations were suggested;

- i. Encourage critical thinking by evaluating and analysing students' view-points or perspectives through their active participation.
- ii. Foster a growth mind-set by encouraging students to view challenges as opportunities for growth, provide constructive feedback, celebrate their efforts and seek strategic means to improve on their answers rather than just correct them.
- iii. Integrate real world problems to improve problem solving skills. This can be achieved through the practical application of their knowledge to case studies and current issues or events.
- iv. Encourage creativity by incorporating activities that allows students to express their ideas in innovative ways through artistic projects and designing of innovative solutions.

In summary, suggestive recommendations for policy makers to improve teaching and learning outcome for students' creativity could include the establishment of learning centres to factor in the role that emotions play in the process of teaching and learning, to provide the opportunity for students to talk about their feelings and concerns, and to provide the resources that will enable students to develop their emotional or mental skills through interaction and collaborative learning. As the reviewed research investigations has found that students who lack the cultural capital required to succeed in their education, especially in higher education, and who lack the services and social networks to acquire it, will experience relative educational failure.

Acknowledgement

Author Contributions: Conceptualization, N.E; methodology, N.E.; validation, N.E.; formal analysis, N.E; investigation, N.E.; resources, R.W.D.; writing—original draft preparation, N.E.; writing—review and editing, R.W.D. All authors have read and agreed to the published the final version of the manuscript.

Institutional Review Board Statement: Ethical review and approval were waived for this study, due to that the research does not deal with vulnerable groups or sensitive issues.

Funding: This research was funded by the National Research Fund (NRF)

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy.

Conflicts of Interest: The authors declare no conflict of interest.

References

- Abakah, E., 2023. Teacher learning from continuing professional development (CPD) participation: A sociocultural perspective. *International Journal of Educational Research Open*, 4, p.100242. <https://doi.org/10.1016/j.ijedro.2023.100304>
- Agyekum, B., 2023. Challenges of learning environments experienced by distance-learning higher education students in Ghana. *International Review of Education*, 69(1), pp.51-72.
- Saeed, M., Ullah, Z. and Ahmad, I., 2020. A qualitative exploratory study of the factors causing academic stress in undergraduate students in Pakistan. *Liberal Arts and Social Sciences International Journal (LASSIJ)*, 4(1), pp.203-223.
- AL-Awamleh, H. K., 2020. The relationship between transformational leadership and administrative creativity: The Jordanian potash company's field study. *International Journal of Management*, 11(4).
- Al-Mamary, Y.H.S., 2021. The impact of transformational leadership on organizational citizenship behaviour: Evidence from Malaysian higher education context. *Human Systems Management*, 40(5), pp.737-749. DOI: 10.3233/HSM-201068
- Almulla, M.A., 2023. Constructivism learning theory: A paradigm for students' critical thinking, creativity, and problem solving to affect academic performance in higher education. *Cogent Education*, 10(1), p.2172929. 10.3390/su15053978
- Butaki, N.C., Ndaita, J. and Matere, A., 2024. The Influence of Intellectual Stimulation on Teacher Productivity in Public Primary Schools in Trans Nzoia West Sub County, Kenya. *Journal of Popular Education in Africa*, 8(2), pp.14-30.
- Chowdhry, S. and Osowska, R., 2017. In search of intellectual stimulation: understanding the relationship between motivation, deep learning and stimulation in the higher education classroom. *Journal on Today's Ideas-Tomorrow's Technologies*, 5(1), pp.9-29.
- Fan, M. and Cai, W., 2022. How does a creative learning environment foster student creativity? An examination on multiple explanatory mechanisms. *Current Psychology*, 41(7), pp.4667-4676
- Guo, J.P., Yang, L.Y., Zhang, J. and Gan, Y.J., 2022. Academic self-concept, perceptions of the learning environment, engagement, and learning outcomes of university students: relationships and causal ordering. *Higher Education*, pp.1-20.
- Han, W. and Abdrahim, N.A., 2023. The role of teachers' creativity in higher education: A systematic literature review and guidance for future research. <https://doi.org/10.1016/j.tsc.2023.101302>
- Hahm, S. and Chen, L., 2020. The Role of Professors' Intellectual Stimulation for Intellectual Growth among Chinese Students Who Study in Korea: The Moderating Effect of Growth Need Strength. *International Journal of Advanced Culture Technology*, 8(3), pp.45-53.
- Hang, L.T. and Van, V.H., 2020. Building Strong Teaching and Learning Strategies through Teaching Innovations and Learners' Creativity: A Study of Vietnam Universities. *International Journal of Education and Practice*, 8(3), pp.498-510. <http://www.conscientiabeam.com/journal/61>

- Henriksen, D., Richardson, C. and Shack, K., 2020. Mindfulness and creativity: Implications for thinking and learning. *Thinking skills and creativity*, 37, p.100689. <https://doi.org/10.1016/j.tsc.2020.100689>
- Hill, J. and Smith, K., 2023. Visions of blended learning: identifying the challenges and opportunities in shaping institutional approaches to blended learning in higher education. *Technology, pedagogy and education*, 32(3), pp.289-303. <https://doi.org/10.1080/1475939X.2023.2176916>
- Ibrahim, N., Ismail, A., Mat, N. and Erhan, T., 2023. Relationship between transformational leadership and employees' creativity with psychological empowerment as mediator. *The South East Asian Journal of Management*, 17(2), pp.1-25.
- Ikedimma, I.F. and Okorji, P.N., 2023. Principal's intellectual stimulation and individualized consideration behaviours as correlates of teachers in secondary schools in Anambra state. *UNIZIK Journal of Educational Research and Policy Studies*, 15(4), pp.17-26.
- Jacob, O.N., Jegede, D. and Musa, A., 2021. Problems facing academic staff of Nigerian universities and the way forward. *International Journal on Integrated Education*, 4(1), pp.230-241.
- Kavitha, K., Saima, S. and Sahana, B.S., 2024. Transforming Education: Exploring Leadership Dynamics And Teachers' Performance In 21st Century Schools. *Educational Administration: Theory and Practice*, 30(4), pp.9671-9683.
- Kwan, P., 2020. Is transformational leadership theory passé? Revisiting the integrative effect of instructional leadership and transformational leadership on student outcomes. *Educational Administration Quarterly*, 56(2), 321-349. <https://ssrn.com/abstract=3601576>
- Khaola, P.P. and Oni, F.A., 2020. The influence of school principals' leadership behaviour and act of fairness on innovative work behaviours amongst teachers. *SA Journal of Human Resource Management*, 18, p.8. <https://doi.org/10.4102/sajhrm.v18i0.1417>
- Mbune, B., Waweru, S.N. and Njuguna, F.W., 2024. Principals' Intellectual Stimulation Practice: Empowering Adoption of ICT in Teaching and Learning in Kenyan Public Schools. <https://doi.org/10.47750/pegegog.14.01.29>
- Sarmiento, A. and Riana, I.G., 2024. Lecturer performance in higher education: transformational leadership, knowledge sharing, change adaptability and its relationship. *Pegem Journal of Education and Instruction*, 14(1), pp.261-269. <https://doi.org/10.47750/pegegog.14.01.29>
- Sauer, P.C. and Seuring, S., 2023. How to conduct systematic literature reviews in management research: a guide in 6 steps and 14 decisions. *Review of Managerial Science*, 17(5), pp.1899-1933.
- Shin, M. and Bolkan, S., 2021. Intellectually stimulating students' intrinsic motivation: the mediating influence of student engagement, self-efficacy, and student academic support. *Communication Education*, 70(2), pp.146-164. <https://doi.org/10.1080/03634523.2020.1828959>
- Supena, I., Darmuki, A. and Hariyadi, A., 2021. The Influence of 4C (Constructive, Critical, Creativity, Collaborative) Learning Model on Students' Learning Outcomes. *International Journal of Instruction*, 14(3), pp.873-892. <http://e-iji.net/>
- Saroyan, A. and Frenay, M. eds., 2023. *Building teaching capacities in higher education: A comprehensive international model*. Taylor & Francis.
- Thuan, L.C., 2020. Motivating follower creativity by offering intellectual stimulation. *International Journal of Organizational Analysis*, 28(4), pp.817-829.
- Macfarlane, B., 2011. Professors as intellectual leaders: Formation, identity and role. *Studies in Higher Education*, 36(1), pp.57-73.

Publisher's Note: Bussecon International stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



International Journal of Business Ecosystem and Strategy by [Bussecon International Academy](#) is licensed under a [Creative Commons Attribution 4.0 International License](#).