DOI: 10.14456/rjes.2020.2

Rangsit Journal of Educational Studies
Volume 7, No.2 (July-December 2020)

Increasing Instructors' Teaching Innovation: A Significant Role of Leaders in Higher Education Institutions

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Received 2020-05-19 / Revised 2020-08-18 / Accepted 2020-10-05

Abstract

In the society of high-speed operation and extreme uncertainty nowadays, innovation becomes a pivotal contributor to enable us to keep up with the advancement of the changing world. In China's universities, how to cultivate innovative talents has become a focus of education. Since the university is the place where instructors may be the most direct influence factor in the process of student training, their abilities in teaching innovation, which is affected by various factors including leaders who are the key decision-maker, are worthy of attention. Nevertheless, leaders, in reality, tend to place themselves in the secondary position of teaching innovation and neglect to provide necessary resources to support the learning. This paper infers the crucial role of university leaders in improving teaching innovation by analyzing the connotation, the importance, the influencing factors of teaching innovation, and recommendations. The recommendations provided for the university leaders to support instructors in consolidating the importance and procedure of teaching innovation through "GISS", a guide of action that includes goal-setting, implementation, supporting, and sharing.

Keywords: *Teaching Innovation, Higher Education, Role of Leaders*

1. Introduction

Innovation is a crucial requirement for the development of society in both developed and developing countries, and it is one of the most essential qualities of the talents needed in the 21st century, especially when facing the uncertainties of the world. China has raised the cultivation of innovative talents to the level of national strategy during the process of transforming from a manufacturing power to a creative power, which is clearly stated in the Outline of China's National Plan for Medium and Long-term Education Reform and

Development (2010-2020). China's National Plan proposes to explore ways to discover and train innovative talents, to deepen education and teaching reform, and to innovate education and teaching methods. Besides, it highlights the cultivation of students' scientific spirit, creative thinking, and ability (Ministry of Education of The People's Republic of China, 2010). In short, how to foster innovative talents has become the primary challenge faced by schools at all levels in China, especially universities.

The significant role of higher education is to subtly improve and even reshape students' mindset, which demands universities to actively explore the innovative talent-training model in the daily teaching and learning process. As one of the major responsibilities of the university, teaching innovation has become the primary factor to improve students' innovative thinking and ability (Geist, 2011; Lin, 2011; Matriano & Pineda, 2018). The ongoing education reform in China also requires instructors to constantly seek innovative methods in daily teaching (Ministry of Education of The People's Republic of China, 2010).

As a result, how to improve the overall innovative consciousness of instructors is worth in-depth discussion. However, much research in related fields has focused on developing innovative approaches at the instructor level (Zhang, Liang & Ma, 2012; Li, Liu, Liu & Wang, 2017; Kong & Li, 2018), that is, how instructors should innovate, such as using new technologies to support teaching (Geist, 2011) and reforming classroom teaching methods (Foster & Yaoyuneyong, 2016). It is true that instructors themselves are the main body of teaching innovation, but leaders, the most important factor in providing innovation environment, are easily to be neglected. In the absence of effective guidance and support of leadership, instructors' motivation for innovation is difficult to be stimulated, which is also considered a vital reason leading to the lack of teaching innovation (Moolenaar, Daly & Sleegers, 2010; Carmeli, Sheaffer, Binyamin, Reiter, Palmon & Shimoni, 2014; Elrehail, Emeagwali, Alsaad & Alzghoul, 2018). This article, therefore, aims to help university leaders raise the awareness of their leading roles and to offer guidance in increasing instructors' teaching innovation in the context of China's social environment. Firstly, this paper describes the definition and significance of teaching innovation, then, elaborates on what factors and obstacles affect the occurrence of teaching innovation, and finally, recommends the process in which leaders can support the incorporation of teaching innovation to enhance the innovative thinking ability in students.

2. Teaching Innovation

2.1 What is teaching innovation?

Teachers' concepts and beliefs on teaching innovatively are crucial as they have a direct or indirect influence on students' thinking and behaviors. However, there is a common phenomenon that teachers' understanding of innovation is based on individual cognitive differences or a lack of professional training (Andiliou & Murphy, 2010). Some teachers or instructors, for instance, associate innovation only with art (Mullet et al., 2016), they believe that innovation is related solely to artistic courses. Some others think that using technology is innovation, which leads to the result of the utilization of electronic teaching equipment such as using PowerPoint only as another form of the

blackboard, and this is another misconception of innovation. Therefore, it is necessary to review the definition of innovation to help with the application of the concept in practice.

Some argue that innovation is a mental behavior, which is a process of questioning an issue based on motivations and needs to solve the problem in other ways (Saliceti, 2015), and this process is multi-stage, where people will actively seek ways to create a model suitable for the organization when realizing the problem that can inspire him or her new ideas (Carmeli, Meitar & Weisberg, 2006). From another perspective, in the process of teaching, the teachers' innovative behavior is the process of improving the existing teaching methods and curriculum design to improve students' interest in learning and, to cultivate students' critical thinking and innovative ability (Lee, 2011). Better teaching results can be produced when creative teaching tools and strategies are applied to teaching appropriately, as Muda and Yusof (2015) put it, teaching innovation is a creative reform of new methods or means adopted by educators to achieve teaching goals, which can help teachers find new approaches to improve teaching.

According to previous literature (Saliceti, 2015; Lee, 2011; Muda & Yusof, 2015), it can be seen that teaching innovation includes innovation in teaching resources as well as in pedagogy. The innovation of teaching resources refers to the simplification of the teaching process with new and meaningful means, such as technology-assisted teaching with electronic whiteboards and online courses (Lee, 2011). As Matriano and Pineda (2018) stated that technology is an important aspect of innovative teaching, and its importance lies in helping teachers reshape and change what should be taught and how to teach in the classroom. Educational technology is a developing field, which can simplify the teaching process and communication with others in the academic world if applied correctly. Therefore, in recent years, educators have spent a lot of time and energy trying to benefit from using technology to improve students' learning efficiency and diversification of thinking (Matriano & Pineda, 2018; Kirkwood & Price, 2013).

Another aspect of teaching innovation is the innovation of pedagogy, which means that teachers can adapt curriculum plans to students' needs and adopt a variety of teaching strategies to improve teaching, thus increasing students' interest in learning and enhancing their ability to translate knowledge into practice (Lee, 2011). For example, Lin (2011) proposed a framework of creative pedagogy, which contains three elements: creative teaching, teaching for creativity, and creative learning. He encouraged instructors to use comprehensive teaching strategies in order to cultivate learners' creativity through this innovative teaching practice. Similarly, Liu, Cao, Wang and Wang (2018) attempted to establish a teaching platform through which students can enhance their independent learning and innovation skills through a variety of ways of knowledge competition and practical training to establish an effective link between student development and social needs.

In summary, the definition of teaching innovation should be the combination of knowledge transmission and innovative thinking based on teachers' own insights and reflections on knowledge, which also includes the exploration of new teaching methods from multiple perspectives, which drives the emerging and development of students' innovative thinking and ability. It is clear that the definition of teaching innovation is the first step to help educators to explore innovation; the next section will focus on the

importance of teaching innovation.

2.2 Why is teaching innovation important?

The significance of teaching innovation lies in helping students develop creative thinking and multi-thinking ability through various teaching methods to improve their future success through education (Lin, 2011). According to Saliceti's (2015) description of teaching innovation, traditional teaching concepts ignore some aspects of learning such as collaborative learning and experimental education. In fact, the functional use of collaborative learning, experiential education, and outdoor education is the learning approach that helps students improve their critical thinking in a flexible and attractive way and also helps them learn new knowledge more effectively. Thus, these approaches should be part of teaching innovation. Matriano and Pineda (2018) explored the possibility of teaching innovation from a more specific perspective. They believed that traditional teaching methods are no longer suitable for the development of contemporary society, teachers must create more possibilities for students' knowledge absorption process, therefore, three teaching innovation methods, namely research-based learning and teaching, case study approach, and the adoption of technology, were proposed to make up for the shortcomings of traditional teaching methods.

In addition to normative research, a large number of empirical studies have also demonstrated the impact of teaching innovation on students' creativity and imagination. For instance, Zhang, Liang, and Ma (2012) creatively applied arouter simulation software named Packet Tracer to a computer network course. By analyzing the feedback of students who used Packet Tracer, the results showed that the software helped students better understand the basic principles and operation process of the computer network, and the practical assignments submitted by the students also indicated that the creativity of students who participated in the innovative teaching has been significantly improved compared to the previous ones. Similarly, a 10-week experiment in which college students were asked to use iPad installed with course-related reading materials and a course management system showed an increase in imagination and creativity because they can access information in the most convenient way, which stimulated their desire to explore more knowledge (Geist, 2011). Besides, Foster and Yaoyuneyong (2016) designed a flipped classroom cross-disciplinary (CD) client-based project (CBP) to address the three weak aspects of past students' careers: creativity, cross-disciplinary cooperation, and realism. In this project, business students from two different fields participated in the courses using innovative teaching methods designed by the researchers, namely Design Thinking and Productive Thinking. As a result, the students' feedback indicated that this new way of learning improved their communication skills and creative thinking, and their confidence in adapting to the future workplace has been heightened.

In summary, teachers' teaching innovation is a part of contemporary education that is very essential, which is also the reason why this article advocates that leaders need to improve the awareness of it. The next section will explain what factors influence teachers' teaching innovation.

2.3 What are the factors affecting innovative behavior?

Without creative thinking, teachers' innovative behavior is difficult to appear

(Foster & Yaoyuneyong, 2016); therefore, many scholars believe that innovative behavior is mainly influenced by internal factors, including personal traits (McDougall, 2010; Messmann & Mulder, 2011; Li et al., 2017; Kong & Li, 2018）and work skills or competence (Sellars, 2012; Carmeli et al., 2014; Thurlings et al., 2015). According to Messmann and Mulder (2011), curiosity and openness are the keys to triggering innovative behaviors, where teachers or instructors with these qualities are more sensitive to new things and are more likely to find new ways to solve problems. In addition, Li et al. (2017) conducted a survey of 352 teachers in China, showing that there is a significant correlation between proactive personality and teachers' innovative behavior, and teachers with proactive personality have stronger will to carry out teaching innovation. Kong and Li (2018) also reached the same conclusion on a survey of 320 teachers in another region of China. In addition, teachers' personal beliefs, as well as cultural beliefs, will influence their perception of creativity and thus will affect the innovative behavior of teaching (Mullet, Willerson, Lamb & Kettler, 2016).

Meanwhile, several existing research shows that teaching innovation is impacted by competence, which refers to the ability of individuals to handle work in the context of contemporary society (Loogma, Kruusvall & Ümarik, 2012). Thurlings et al. (2015) outlined the competency of teachers as four points: developing specific abilities, problem-solving, recognition and assessment of opportunities, and content knowledge of teaching. These abilities determine the quality level of teachers' teaching innovation activities. The innovative models built by Loogma, Kruusvall and Ümarik (2012) displayed that competence can predict teachers' innovative behavior, for example, their skills in using electronic products can effectively predict their innovative ability in new media teaching. Moreover, Carmeli et al. (2014) confirmed that self-leadership is positively related to teaching innovation behavior and that people can improve their self-leadership through training at work, thus improving work outcomes. Likewise, the results of Sellars' (2012) study also indicated that people with high self-leadership show high creativity, which has a positive significance, because in the competition of knowledge-based society, teachers' self-leadership is a vital manifestation of job competence, which leads to higher initiative and innovative behaviors, helping them stand out from the competition.

In addition to the study of internal factors, numerous scholars have focused on the external factors that influence teachers' teaching innovation, trying to find out which external factors can promote this kind of innovative behavior. Thurlings et al. (2015) argued that external factors such as leadership support, interpersonal relationships, organizational culture, facilities, and resources are contributing factors to innovative behavior, where the intrinsic motivation of an individual can be effectively exerted under the stimulation of a favorable external environment. Similarly, Muda and Yusof (2015) deemed that the social exchange between university instructors is an important part of the education network, where the circulation of knowledge can be effectively promoted through the exchange with other educators, thus, more inspiration and innovative behaviors will be facilitated via continuous support and feedback. Therefore, it is necessary to offer such communication and sharing platforms as well as facilities for instructors, and such an open and inclusive knowledge sharing system requires the

support of open campus culture and climate. In addition, Rubenstein et al. (2013) stated that the campus climate has a positive effect on teachers' awareness of innovation, meaning that teachers' innovative behavior is encouraged when the campus climate perceived as supportive, open, and active, thereby their personal efficacy is improved.

On the contrary, teaching innovation will be negatively affected by obstacles and barriers in the organization, where teachers lack the energy and motivation to innovate when organizations do not have a clear vision and guidelines for action (Thurlings et al., 2015), and the interaction between such innovative climate and knowledge comes from the promotion of leaders, where they play an essential role in promoting or inhibiting the flow of knowledge and information within the campus (Moolenaar, Daly & Sleegers, 2010). For instance, research has found that some specific leadership styles such as transformational leadership (Carmeli et al., 2014) and authentic leadership (Elrehail, et al., 2018) have a positive impact on stimulating teachers' innovative thinking and behavior, which is considered to be effective in predicting organizational innovation (Chen, Zheng, Yang & Bai, 2016). In addition, some behaviors of leaders, such as providing support (Chen et al., 2016) and planning a clear vision (Elrehail et al., 2018), are external factors that motivate teachers to innovate. In short, teaching innovation behavior is more likely to emerge in a campus climate with leaders' support and appropriate resources.

3. The Significant Role of Leaders in Teaching Innovation

Despite the long-standing demands on teaching innovation, the improvement of teachers' awareness of teaching innovation is not smooth when implementing, which is a global phenomenon (Mullet et al., 2016; Fu, 2018; Matriano & Pineda, 2018). In addition to the internal ingredients such as the vague understanding of the definition of teaching innovation mentioned earlier, the lack of external driving forces is also a central factor that leads to a weak innovation consciousness. For example, many teachers or instructors have a belief in innovation, other expectations from the leaders, such as covering content and preparing standardized assessments for students, resulting in a compression of time and energy to translate innovative beliefs into actions (Andiliou & Murphy, 2010). These external pressures from the leaders may cause the lack of innovative behaviors (Fu, 2018), while as time goes by, the instructors in universities will be gradually accustomed to this state of weak incentives to make innovation, in a conservative and unmotivated academic atmosphere, thereby, it will become a common consensus to be content with the status quo.

This paper deems that such incentives come from the overall innovative environment or climate, which is also a crucial factor for the lack of teaching innovation and is generally recognized by scholars that this innovative climate drives from the leaders (Mullet et al., 2016; Elrehail et al., 2018). When it comes to the responsibilities to be undertaken by leaders, numerous studies have interpreted leadership as a proper term (Carmeli et al., 2014; Mullet et al., 2016; Elrehail et al., 2018), and various types of leadership styles have been decomposed, among which transformational leadership is considered to have a strong relationship with innovation (Chen et al., 2016). For example, in Elrehail et al. (2018) study, it is explained that transformational leadership includes four dimensions: idealized influence, inspirational motivation, intellectual stimulation,

and individualized consideration, in which leaders express an appealing vision to motivate and encourage the subordinates to question outmoded ideas and behaviors, innovating novel methods in the process of attempting to solve the problems. Besides, they recognize the personal value of their followers and provide support for the original ideas through individualized consideration to improve their creativity (Carmeli et al., 2014; Chen et al., 2016). In a word, the leaders using transformational leadership style play the role of motivators and supporters, where they encourage subordinates to regard challenges as opportunities and re-frame their thinking and action modes in the process of overcoming difficulties, thus increasing the possibility of innovation. Therefore, it can be concluded that leaders are the key predictor to achieve the goal of overall innovation through several mediating factors (Mullet et al., 2016).

Other leadership styles, such as authentic leadership, also have the function of raising innovation behavior, where authentic leaders establish a sincere, transparent, and trusting relationship with followers, which is a potential factor driving organizational innovation, because, in such a trusting working atmosphere, authentic leaders transfer their vision and mission to subordinates with calmness and tolerance, which gives followers the motivation and determination to carry out tasks. Consequently, these characteristics of authentic leaders may provide an enabling environment for innovation by subordinates, which can lead to new ideas and creativity, especially in higher educational institutions (Elrehail et al., 2018).

As can be seen from previous literature, when it comes to the formation of employee personal innovation and organizational innovative climate, the role played by leaders is critical, regardless of leadership style and workplace. It is vital for leaders to be able to use their influences to ensure the process of developing teaching innovation is successful, such as organizational learning, support of resources and policies, and perceived innovative climate (Moolenaar et al., 2010). Moreover, interpersonal relationships within the organization affected by the leaders are also significant, which cannot be ignored. For example, the survey by Carmeli et al. (2014) found that the human capital of leadership and social capital such as the network of social relationships between members of the organization and with external members, such as friendships, information, and advice, equally provides vital resources for the formation of an innovative climate. Besides, knowledge sharing norms are regarded as a meaningful mediator, which depends on the incentives of university leaders for sharing innovative experiences and the establishment of channels (Elrehail et al., 2018).

In short, teachers' awareness of teaching innovation comes from an innovative campus climate to a large degree, and when the whole campus climate is regarded as supportive, open, and active, teachers' personal efficacy will be improved as their innovative behaviors are encouraged (Rubenstein, McCoach & Siegle, 2013). while on the contrary, some barriers, such as the lack of organizational consensus, have a negative impact on teachers' innovation (Thurlings, Evers & Vermeulen, 2015). Leaders, as the direct creator of school or college culture and the prime decision-maker of innovative climate, play a significant role in educational administration, and those with professional knowledge can positively stimulate innovation (Moolenaar et al., 2010). In other words, teaching innovation behavior is more likely to appear in a campus climate with incentives

from leaders, who, however, tend to place themselves in the secondary position of teaching innovation and neglect to provide necessary resource support (Kirkwood & Price, 2013).

In brief, based on the literature review discussed above, teachers' teaching innovation can be influenced by their personal traits (Li et al., 2017; Kong & Li, 2018) and organizational climate (Muda & Yusof, 2015), and the individual internal factors such as personal efficacy and motivation can be actively stimulated by appropriate external factors, especially leadership (Chen et al., 2016; Elrehail et al., 2018), which influences instructors supplemented with certain moderating factors by modeling the way, planning a vision, providing support, and building a harmonious interpersonal network, etc., thus promoting the emergence of instructors' innovative thinking and actions (Carmeli et al., 2014). Under this circumstance, the role of the leaders in shaping such favorable external factors is worthy of discussion, which, somehow, is in a state of overlooked by many researchers in this field. This paper suggests that leaders should play a dominant role in the process of promoting teaching innovation, and actively seek breakthroughs, striving to create a collective sense of innovation, and encouraging, supporting, and motivating instructors' teaching innovation potential, instead of relying solely on the instructors' own intrinsic willingness that may lack sustained motivation. The next section will focus on how university leaders should perform.

4. Recommendations: GISS

The instructors in universities need innovative teaching methods and teaching strategies to improve students' diverse thinking ability. However, such teaching requirements cannot be simply regarded as the self-issuance of individual instructors. Instead, university leaders are required to explore actively the incentive models to create an open climate of innovation to promote the formation of collective innovation consciousness, this awareness should be rooted in the minds of leaders, guiding them to make appropriate decisions and strategies. Based on the finding of the literature review discussed above: 1) teachers' or instructors' understanding of innovation is biased (Andiliou & Murphy, 2010); 2) effective guidance and actions from leaders can stimulate innovative behaviors (Moolenaar, Daly & Sleegers, 2010; Carmeli et al., 2014); and 3) teachers lack the motivation to innovate without the external support provided by the leaders (Thurlings et al., 2015; Elrehail et al., 2018), thus, the recommendation of leaders is "GISS", a guided action for leaders in order to enhance the teachers' collective innovation consciousness and innovative climate.

Goal setting: Establish a clear goal of organizational innovation development, and clarify and affirm the value of teaching innovation. Leaders can incorporate this into the university's long-term missions, highlighting the importance of this philosophy in the form of documents to enhance instructors' recognition and participation in co-building an innovation climate, especially for novices. For example, teachers are required to embody the teaching innovation method in the syllabus, which can be one of the evaluation indicators in the annual assessment. Guided by clear goals, instructors will be more motivated to put ideas into practice.

Implementation: Provide training to help instructors understand what teaching innovation is, what it means to be innovative, and how to innovate. Highlighting the mutual comprehension of innovation is crucial, that is, teaching innovation is not the mechanical use of information technology, but requires instructors to cultivate students' innovative thinking as the center for active teaching exploration, including but not limited to the use of new teaching resources. Instead, diverse class modalities, teaching strategies, and student assessment methods can be part of innovative teaching forms. Thus, leaders can consider organizing regular training via inviting experienced experts to help elucidate how to proceed. In addition, instructors need to document the practice of teaching innovation, while a team of administrators and experienced teachers evaluate the practice to help them perform better.

Support: It is important that leaders provide the necessary support both physical (resources) and psychological support, which are the incentives that stimulate their inner desire for innovation. When instructors' innovative behaviors produce positive teaching effects, leaders should affirm and reward to encourage instructors to continue this active exploration. However, it needs to be clear that encouraging innovation does not mean laissez-faire and disorderly management, but active administration under a clear supervision system, meaning that timely correction and guidance are required when the deviation of instructors' teaching innovation behaviors occurs, which requires leaders to have a clear understanding and planning in management.

Sharing: Knowledge sharing is crucial to sustainable success. Thus, it is necessary to build a knowledge-sharing platform. Teachers will be able to share their excellent teaching innovation cases through online and offline platforms built by leaders to ensure the positive results of effective dissemination. At the same time, unimpeded knowledge communication and interaction can be a catalyst for teaching innovation to promote instructors' thinking collisions and brainstorming. For example, learning community can also be an option, where instructors absorb colleagues' experience through observation or consultation that is not necessarily tangible, but a conscious learning habit in the overall university innovation climate.

In short, the future is unpredictable, thus in order to support our students to be productive citizens for the future, it is important that teachers provide powerful weapons to our students. This powerful weapon for students is to enhance creativity, imagination, and innovative talents, which poses a challenge for college educators and leaders. Simultaneously, however, it is also an opportunity for university leaders to continue thinking and learning with a positive attitude so that both education and society will benefit from their leadership.

5. Conclusion

This paper firstly explains the definition of teaching innovation, which is the combination of knowledge transmission and innovative thinking on the basis of teachers' own insights and reflections on knowledge, exploring new teaching methods from multiple perspectives, so as to infect and drive the emerging and development of students' innovative thinking and ability. Secondly, it analyzes the significance and influence factors of instructors' innovative teaching. Thirdly, it spells out why university leaders

should take the major responsibilities to help increase the awareness of instructors' teaching innovation, and fourthly offers a guide to actions named GISS. As a result, it concludes that it is essential for university leaders to have a clear awareness of how to motivate instructors to actively explore the teaching innovation in a collective innovation climate, thus achieving the goal of improving students' innovative thinking and ability. Given the unique and important position of leaders in this area, this article looks forward to the discussion and suggestions of other scholars, such as how to encourage leaders to implement the process actively in order to support teaching innovation, and relevant academic papers as well as empirical researches, which will help with the deeper development of this topic.

This article suggests that university leaders should play a dominant role in the process of promoting teaching innovation, and actively seek breakthroughs, strive to create a collective sense of innovation, encourage, motivate and support instructors' teaching innovation potential.

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