

Understanding the Educational Innovation Practice in Teaching and Learning among Economic Teacher's in Klang Valley

Mohamad Zuber Abd Majid^{1*} and Nofouz Mafarjaa²

¹Center of Innovative Studies in Learning & Teaching, Faculty of Education, Universiti Kebangsaan Malaysia, Malaysia.

²Department of Education and Graduate Studies, Faculty of Technical and Vocational Education, Universiti Tun Hussein Onn Malaysia, Malaysia.

Abstract. The global health crisis of COVID-19 has transformed the global education landscape, shifting towards digital-based education for teaching and learning. Consequently, the predominant medium for teaching and learning practices is now digital technology. However, the utilization of digital technology, particularly innovations in teaching and learning, is not widely embraced in economic education. This study aims to explore the factors contributing to the limited innovation among economics teachers in the classroom and suggests measures to foster innovation in economic learning. Using a cross-sectional survey design with a qualitative research approach, the research sample involved 12 informants with over 10 years of teaching experience in form colleges around the Klang Valley. Semi-structured questions were employed for data collection, and thematic analysis was used to address the study objectives. The results revealed 11 sub-themes within 4 categories representing obstacles to cultivating innovation among economics teachers. Additionally, 5 sub-themes within 2 categories highlighted measures to empower innovation in economics teaching. The study's findings can serve as a reference for colleges, heads of economic education modules, and the Malaysian Ministry of Education to promote the digitalization and innovation of the economic field.

1 Introduction

In the ever-changing landscape of education, adopting innovative teaching methods has become crucial for effective learning. Educational innovation not only enhances student engagement and critical thinking skills but also prepares students for the challenges of the modern world. In particular, the field of economics is significant, equipping students with essential knowledge to comprehend complex economic systems and make informed decisions [1].

Education plays a pivotal role in shaping the future, and the teaching and learning field constantly evolves to meet learners' changing needs. In economic concepts and it's crucial for teachers to adopt innovative practices that engage students, enhance their understanding of

*Corresponding author: mzuber@ukm.edu.my

economic concepts, and prepare them for the challenges of a rapidly evolving global economy [2].

Effective teaching practices significantly impact student learning outcomes [3]. Educational innovation, characterized by integrating new teaching methods, technologies, and approaches, has the potential to enhance student engagement, critical thinking, and problem-solving skills [4]. By embracing innovative teaching practices, economic teachers can create dynamic learning environments fostering active student participation, collaboration, and the application of theoretical concepts to real-world scenarios [5]. However, the extent to which economic teachers incorporate educational innovation into their pedagogical practices remains relatively unexplored. While there's growing research on educational innovation in general, specific investigations into practices employed by economic teachers are needed. Understanding the current landscape of educational innovation in economic education is crucial for identifying effective strategies and addressing potential challenges.

Economic teachers in Malaysia play a crucial role in shaping students' understanding of economics. They're responsible for imparting economic concepts, theories, and practical applications, preparing students for the challenges of the modern economy. In Malaysia, economic teachers are typically trained professionals with a strong background in economics and pedagogy. They possess the necessary knowledge and skills to deliver economic education effectively, guided by the Ministry of Education's guidelines and curriculum frameworks [6]. However, exploring the specific challenges and opportunities faced by economic teachers in Malaysia, particularly in terms of adopting innovative practices and cultivating a culture of innovation in economic teaching and learning, is essential.

Educational innovation practices in teaching and learning economics are crucial for enhancing student engagement, critical thinking, and problem-solving skills. In Malaysia, teachers are encouraged to adopt innovative approaches to teaching economics, such as technology-enhanced learning, project-based learning, flipped classrooms, and collaborative learning [7,8]. These practices aim to create an interactive and dynamic learning environment that fosters active student participation and a deep understanding of economic concepts. However, there's a need to further investigate the extent to which these innovative practices are adopted by economics teachers in Malaysia and the factors influencing their acceptance and implementation [8]. Understanding the challenges and opportunities faced by teachers in integrating educational innovation practices in economics teaching and learning is crucial for promoting effective pedagogy and maximizing student learning outcomes.

Kleng Valley serves as a prominent economic hub characterized by diverse industries, an entrepreneurial spirit, and economic dynamism. In such a dynamic environment, economic education is crucial for equipping students with the knowledge and skills necessary to navigate the complexities of the local and global economy. Economic teachers in Kleng Valley face the challenge of preparing students for an ever-evolving economic landscape, where traditional teaching methods may fall short of meeting the demands of the modern workforce.

In summary, this research aims to shed light on the educational innovation practices employed by economic teachers in their teaching and learning processes. Identifying teachers' acceptance of innovative practices in economic teaching and learning has the potential to enhance student engagement, critical thinking, and problem-solving skills. However, the extent to which economic teachers accept and adopt these innovative practices remains unclear. Understanding teachers' acceptance of innovative practices is crucial for promoting their effective implementation and maximizing their impact on student learning outcomes. Additionally, identifying the steps that teachers can take to integrate innovative practices into their pedagogical approaches is essential for cultivating the practice of innovation in economic teaching and learning. However, there's a lack of comprehensive

understanding regarding the specific steps that economic teachers can undertake to foster innovation in their teaching practices. Addressing this gap can pave the way for more effective and engaging economic education, benefiting both teachers and students alike.

2 Literature Review

2.1 Educational Innovation in Teaching and Learning

Educational innovation in teaching and learning encompasses the advancement of knowledge and practical solutions to real problems in the educational sector. It involves applying innovative methods and approaches in the classroom to address common issues and transform the educational model [9]. Different interpretations exist regarding educational innovations and innovations in education. Educational innovations focus on specific procedures or methods of educational activity that significantly differ from established practices, while innovations in education encompass a broader range, including pedagogical, scientific, technological, and administrative innovations [10]. Developing educational innovations is crucial for higher education institutions to stay competitive in the education market and meet society's needs for quality education [11]. There has been a renewed interest in educational innovation in higher education, with academics encouraged to engage in innovative teaching and learning practices [12]. Millennials, who have different learning needs and preferences, require innovative approaches that make learning enjoyable and stress-free [13].

Educational innovation in teaching and learning is essential for shaping a creative and innovative young generation for future development [14]. Driving improvements in teaching and learning through innovation in higher education is crucial [15]. Strengthening language mastery among students and incorporating innovative elements in teaching methods can encourage students to excel in their studies [16]. The COVID-19 pandemic has underscored the need for innovative approaches to education, with the emergency response revealing strengths, challenges, and gaps that need addressing for future policy innovations [17]. Overall, innovation in education is necessary to prepare students for future challenges, improve problem-solving skills, and unlock their potential for their future careers [18]. It requires a complex leadership approach, engaging with stakeholders, encouraging experimentation, and creating a safe environment for failure.

Educational innovation in teaching and learning is influenced by various factors. Research shows that primary school teachers need support and training to effectively adopt and integrate digital technologies in education [19]. The concept of innovation has evolved over time, and it is important to have a holistic view of innovation in society and different fields, including education [20]. The COVID-19 pandemic has accelerated the implementation of innovative approaches in education, such as technology-enhanced learning environments and adaptive learning [21]. Holographic teaching, as an educational innovation, has been studied in higher education, and it was found that while it does not directly improve learning outcomes, it enhances the flow experience for students [22]. Overall, factors such as teacher training, a holistic understanding of innovation, the use of technology, and pedagogical approaches play a role in influencing educational innovation in teaching and learning.

2.2 Economics Education and Teaching Practices

Improving school quality with limited resources is a crucial policy issue. Guided instruction methods can enhance outcomes in underperforming schools, but reaching the most deprived children remains a challenge [23]. The relevance of the pre-service education economics

curriculum in teaching senior school Economics in Nigeria has been investigated. It was found that the current economics education content effectively caters to the teaching needs of senior schools' Economics [24].

The "maker education + SPOC" teaching model has shown promise in improving the teaching quality of political economics courses, fostering students' innovation ability, and enhancing problem-solving skills [25]. An economics teaching aid has been developed, featuring a box body, a cover plate, and a display mechanism. This aid allows teachers to adjust the trend chart in real-time, providing a convenient way for students to visually understand changes in economic trends [26].

Economics education and teaching practices in Malaysia are undergoing significant changes to align with global trends and the pursuit of a world-class educational system. Efforts are underway to elevate the knowledge and skills of teachers in classroom assessment, aiming to enhance the teaching and learning process [27]. However, there is a recognized need for continuous professional development courses to enhance the practices of home economics teachers, particularly in competency-based assessment [28].

Reflective thinking and metacognitive awareness are crucial factors in explaining differences in teaching practices among Malaysian pre-service teachers [29]. The predominant teaching practices in Malaysian classrooms have been found to be unlikely to promote higher-order thinking and "learning-to-learn" abilities [30]. These findings underscore the need for systemic changes in pedagogical practices to improve economics education and teaching practices in Malaysia [31].

2.3 Educational Innovation Practices in Economics Education

Traditional teaching approaches in economics have faced criticism for their emphasis on abstract models and technical skills, potentially alienating students and making the subject seem disconnected from the real world [32]. Surprisingly, there has been a lack of emphasis on alternative teaching methods, such as problem-based learning (PBL), in economics education [33]. PBL has demonstrated superior learning outcomes, including increased enthusiasm, analytical skills, and the development of writing and presentation abilities [34]. However, in terms of knowledge acquisition, PBL does not exhibit a significant advantage [35]. The use of online courses in economics education has grown, but research on student performance in online courses versus traditional lecture-based courses is inconclusive [36]. One study found a significant grade difference between stronger and weaker students in online courses. Overall, there is a need to explore and evaluate alternative teaching approaches in economics to enhance student learning outcomes.

Educational innovation practices in economics education involve integrating technology into the classroom to bridge the gap between traditional teaching methods and the demands of the 21st Century. This integration is viewed as a means to promote transformative innovation in education, leading to improved performance, reforms, and opportunities [37]. The construction engineering industry acknowledges the importance of integrating professional education with innovation and entrepreneurship education to meet the needs of industrial development [38]. In the context of Technology Livelihood Education (TLE), innovation and integration contribute to student engagement, cater to multiple learning styles, foster collaboration, provide instant feedback for teachers, and prepare students for their future careers [39]. Educational innovation, facilitated by computers and information technologies, presents opportunities to enhance teaching and learning methods, personalize learning, and analyze data for decision-making [40]. Innovative technologies play a crucial role in higher education, with a focus on their development and effectiveness in improving the educational process.

Educational innovation practices in economics education, particularly collaborative learning, have been advocated for in the literature for more than two decades [41]. Collaborative education mechanisms are proposed as a way to integrate all forces and realize complementary advantages in innovation and entrepreneurship education in colleges and universities [42]. A study on collaborative learning during an innovation project course found that students reported high degrees of success in achieving their goals and steadily increasing confidence in various competencies related to the innovation process [43]. Collaborative and team-based learning approaches have been shown to provide relevant and generative approaches to working through real-world issues, promoting student citizenship, collaboration, and effective practice [44]. Game-based learning has also been used to complement theoretical sessions in economics education, enhancing the learning experience and promoting teamwork and collaborative thinking [45]. These findings underscore the importance and effectiveness of collaborative learning in economics education.

2.4 Challenges and Opportunities for Educational Innovation (Teacher Professional Development, Policy and Infrastructure)

Educational innovation encounters both challenges and opportunities. The onset of the COVID-19 pandemic has prompted the shift to online teaching and learning, introducing new challenges and opportunities for educational development [46]. Learning from personal experiences, including failures, is pivotal for professional development [47]. Gamification emerges as a valuable tool to address challenges in implementing educational innovations and enhance their effectiveness [48]. The COVID-19 pandemic has necessitated adjustments in educational courses, leading to the discovery of unintended benefits and opportunities [49]. Furthermore, the ongoing pandemic has underscored the need to update technology-enhanced learning models and university programs to meet the demands of reskilling and lifelong learning [50]. Successfully navigating these challenges and seizing opportunities demands educators to be innovative, adaptable, and open to transforming challenges into opportunities.

3 Methodology

3.1 Research Design

A cross-sectional survey design was employed using a qualitative research approach to delve into the phenomenon of innovation acceptance in the Teaching and Learning (T&L) practices of economics teachers. This method proves more suitable for comprehensively understanding the intricacies of how economics teachers embrace innovation and the steps involved in fostering innovation in T&L.

As Cleland (2017) notes, a qualitative approach allows researchers to explore questions that aren't easily quantifiable, providing insight into the human experience [51]. This approach enables researchers to grasp the everyday realities surrounding a social phenomenon, addressing significant questions as they naturally unfold. By adopting a qualitative methodology, the researcher gains a deeper understanding of the practices and experiences of economics teachers in their teaching and learning environments.

3.2 Sample and Instrument Tool

The research sample included 12 informants with over 10 years of teaching experience, instructing at form-six colleges in the Klang Valley. This sample size aligns with the recommendation of [52], who suggest that qualitative studies should have a minimum of 12

participants to achieve data saturation. Purposive sampling, as advised by [53], was employed in this study to gather focused data based on specific criteria related to the research scope.

For data collection, this study utilized semi-structured questions. These questions were developed based on a thorough review of the literature, expert feedback, and observations from past case studies related to the research scope. The set of questions, exceeding 10 in number, covered areas such as background profiles, innovations in teaching and learning, and barriers faced when implementing technology and innovation in the classroom.

3.3 Data Analysis

Thematic analysis was used to answer the objective of the study. The systematic procedure to conduct thematic analysis methods follows the procedure recommended by [53]. There are several steps to conduct thematic analysis, i.e. (1) Transform the data from audio to verbatim transcript; (2) Read and familiar with the data; (3) Identify the theme with the inductive method; (4) Identify the theme with inductive method; (5) Categories to a valuable theme; and (6) Writing the finding. All the process makes the qualitative data more valuable and interpretation with strong evidence to highlight the phenomena.

4 Results and Discussion

The study's findings are outlined through a summary encompassing participants' profiles, acceptance of innovation in Teaching and Learning (T&L), and recommendations to enhance or cultivate T&L among economics teachers in the Klang Valley area. The details of the findings are elucidated as follows:

Table 1: Research Profile

Informant (I)	Gender	Teaching experience
I 1	Male	10 years
I 2	Male	15 years
I 3	Female	11 years
I 4	Female	18 years
I 5	Female	10 years
I 6	Male	12 years
I 7	Female	11 years
I 8	Female	16 years
I 9	Male	10 years
I 10	Male	16 years
I 11	Female	15 years
I 12	Female	12 years

Table 1 outlines the total number of participants in this study, which is 12 individuals. Regarding gender distribution, the majority of participants are female (7 individuals), while the remaining participants are male (5 individuals). Additionally, all participants in the study possess teaching experience in the field of economics for 10 years or more. The highest level of teaching experience reported is 18 years, while the lowest is 10 years. Further insights from the thematic analysis are presented in Table 2 and Table 3 below:

4.1 The Adoption of Innovation in Teaching and Learning of Economics

Table 2: A summary of the thematic analysis of innovation acceptance in economics teaching and learning

Informant (I)	Convenience Disadvantages (KK)			Time constraints (KM)			Literacy of Technology (LT)		School administration (PS)			
	Support of technology (SK)	Computer lab services (KMK)	Internet services (KI)	Curriculum activity (AKO)	Curriculum activity (AKU)	Interest (M)	Lack of supporting (TS)	Cultivation of Innovation (PI)	Individualistic (IN)	School Leadership (KS)	Lack of support from MoE (SKPM)	
I1	/	/	/	/	/	/	/	/	/	/	/	/
I2	/	/	/	/	/	/	/	/	/	/	/	/
I3	/	/	/	/	/	/	/	/	/	/	/	/
I4	/	/	/	/	/	/	/	/	/	/	/	/
I5	/	/	/	/	/	/	/	/	/	/	/	/
I6	/	/	/	/	/	/	/	/	/	/	/	/
I7	/	/	/	/	/	/	/	/	/	/	/	/
I8	/	/	/	/	/	/	/	/	/	/	/	/
I9	/	/	/	/	/	/	/	/	/	/	/	/
I10	/	/	/	/	/	/	/	/	/	/	/	/
I11	/	/	/	/	/	/	/	/	/	/	/	/
I12	/	/	/	/	/	/	/	/	/	/	/	/

4.1.1 The weaknesses in facilitating innovation in economics teaching and learning

A crucial factor hindering the adoption of innovation in the Teaching and Learning (T&L) practices of economics teachers is the insufficient availability of facilities. Noteworthy weaknesses in the identified facilities encompass deficiencies in technology support, computer lab facilities, and a lack of internet network facilities. The findings emphasize that a majority of participants highlighted the inadequacy of technology support facilities as a significant barrier to cultivating innovation in T&L.

"I found the main challenge of cultivating innovation in teaching and learning at school is the lack of technological support for teachers to innovate." (KK/SK/I1)

In addition, an in-depth interview was conducted to find out what aspects of technology support were less intended by teachers.

"...for me as a teacher, I need to provide my own equipment such as laptops, iPads and others to help me prepare teaching and learning materials. Usually, the electronic facilities provided by the Ministry of Education to schools need to be shared with other teachers. Its use is also quite limited." (KK/SK/M/I11)

Teachers' willingness to innovate in Teaching and Learning (T&L) may face obstacles due to insufficient technology support facilities provided by the Ministry of Education. Elevating teachers' enthusiasm for innovation in T&L can be achieved by incorporating facilities like technology support as an integral aspect of the culture of innovation in classroom teaching. Embracing innovation in T&L among teachers can directly enhance student motivation and focus. This aligns with [54], who emphasizes that adequate facilities are a crucial factor in fostering student motivation to learn.

Furthermore, the findings reveal constraints in the computer lab facilities provided at schools. Concerning computer laboratory facilities, some informants expressed that activities aimed at fostering innovation in T&L through technology are severely limited.

"Computer laboratory facilities in each school, on average only one or two laboratories. This lab is equipped with only 20 to 30 computers." (KK/KMK/I2)

The cultivation of innovation through technology in Teaching and Learning (T&L) is hindered by the constraints posed by the extensive number of classes and students awaiting their turn to utilize the laboratory. This scenario compels teachers to opt for traditional teaching methods as a means of content delivery.

"The computer laboratory facilities in government schools are very limited to accommodate the number of classes and students. Teachers who want to innovate using technology need to make reservations in advance and wait for their turn to use it. This situation makes teachers prefer to conduct teaching and learning using a pen and paper approach like the traditional practice of learning..." (KK/KMK/M/I17)

This finding explains that the implementation of innovation in the Teaching and Learning (T&L) practices of economics teachers in schools is primarily inclined towards non-electronic methods. Innovation in T&L is more commonly practiced through traditional means, involving the use of pen and paper. Hence, it is evident that integrating innovation

through technology necessitates comprehensive technological facilities. The absence of these facilities may lead to a decline in teachers' motivation to diversify innovative T&L practices [54], consequently impacting student motivation as well [55].

The findings also uncover that the inadequacy of internet network facilities is another factor impeding the acceptance of the culture of innovation in the T&L practices of economics teachers. A majority of informants indicated that constraints in internet network availability pose a significant obstacle to fostering innovation in T&L.

"Most schools do not have a good internet network to support the use of technology in innovating for learning and learning in the classroom. The common practice used by teachers is to only use teaching materials in storage and open them online." (KK/KI/I12)

The findings in this section explain that online activities cannot be executed due to the absence of internet network coverage in schools. Traditional activities, such as drills and presentations, are exclusively conducted using conventional approaches. More detailed feedback for this aspect is outlined as follows:

"...learning activities of economics teachers in schools can only be done using traditional methods, where drills or presentations cannot be done using software or applications that require an internet network." (KK/KI/M/I4)

The results underscore the essential role of internet networks in fostering innovation in the teaching and learning practices of teachers. OECD (2016) highlights that internet networks serve as a source of innovation, particularly in Teaching and Learning (T&L) [56]. These supportive resources play a direct role in enabling the culture of innovation to be implemented among teachers. Limitations in facilities and the absence of a supportive system for the culture of innovation contribute to a decrease in teachers' willingness to innovate in T&L.

4.1.2 Time constraints cultivate innovation in economic teaching and learning

Time constraints are an obstacle to the adoption of the culture of innovation in the T&L of economics teachers. The findings of the study show that most informants stated that time constraints occur due to full commitment to co-curriculum and curriculum activities among teachers. The statement for that aspect is as follows:

"The teacher's schedule is always packed with extracurricular activities at school. Where the planning of co-curricular activities has been planned by the school, which is usually outside of learning hours." (KM/AKO/I10)

This finding shows that this co-curriculum aspect is important to implement because it is occupied into excuse as an aspect of student self-development through active involvement in the extracurricular.

"Teachers are responsible for carrying out co-curricular activities at school because they have been counted as an element of student success assessment. So, as a teacher, it is necessary to commit outside of learning time for extracurricular activities." (KM/AKO/M/I5)

Likewise, the findings show that the majority of informants express constraints on the acceptance of innovation in teaching and learning due to time constraints for curriculum activities. Teachers are bound by a tight class schedule and the amount of learning that needs to be completed.

"The curriculum at the school is very dense and needs to be completed according to the punctuality that has been set."(KM/AKU/I3)

Cultivation of innovation in T&L does not happen due to the large amount of time that needs to be spent, and the modular approach in the form of notes is used as a teaching aid.

"Usually, teaching and learning in class only use notebooks or reference books. While drill training activities are easier to implement using training books. This is because it takes more time to carry out more innovative activities. If it continues, teachers are faced with the problem of exhausting the learning measures." (KM/AKU/M/I11)

This finding clearly shows that the acceptance of innovation in the T&L of economics teachers is hindered due to the tight planning of school activities. Cultivating this innovation requires the commitment of the teacher from the aspect of time for the preparation of innovation in learning in the classroom. Time efficiency is very important for the provision of teacher innovation in learning at school [57].

4.1.3 The weakness of technological literacy to cultivate innovation in economic teaching and learning

The acceptance of teachers' innovations in T&L is also hindered due to teachers' weaknesses in technological literacy. Weaknesses in the aspect of technology make teachers less interested in using technology as an innovation in T&L. The findings show that the majority of informants expressed a lack of interest due to a lack of knowledge about the use of technology. The findings show that the majority of informants expressed a lack of interest due to a lack of knowledge about the use of technology.

"I don't have the skills to operate the latest technology equipment in the classroom. As a teacher, I am not interested in using innovation in learning because it is difficult to imply it in class." (LT/M/I4)

The interesting finding shows that teachers with high technology skills will be more likely to innovate in the classroom.

"...I like to use technology in learning. Therefore, I always think about the appropriate method for me to convey learning using technology. But teachers need to have a high interest in the use of technology; then they will try to produce innovation" (LT/M/KT/I9)

The acceptance of the culture of innovation in T&L is also hindered due to a lack of support for improving technological literacy. The majority of informants stated that lack of support is one of the causes of weak technological literacy among teachers.

"...course or workshop support for the use of technology in innovation is very little carried out. Usually this kind of exploration needs to be done by the teacher himself." (LT/TS/I8)

The acceptance of the culture of innovation in the T&L of economics teachers is less accepted due to the lack of technological literacy among teachers. The lack of skills in handling technology will cause teachers to be less interested in innovation in learning. Weaknesses in technological literacy make teachers more persuaded to choose traditional teaching in the classroom. Weaknesses in technological literacy also contribute to the deterioration of teachers' motivation to innovate [55]. Therefore, the importance of cultural support such as technology guidance courses, workshops, and classes are introduced to teachers to generate innovative ideas in learning in the classroom.

4.1.4 The weakness of school administration to cultivate innovation in economics teaching and learning

Schools are also one of the causes of the lack of acceptance of the culture of innovation in T&L by teachers. The results of the study found four sub-themes of constraints on the culture of innovation among teachers, namely (1) lack of a culture of innovation at the school level, (2) individualistic culture of innovation, (3) lack of support from administrators, and (4) lack of support from the Ministry of Education. This finding shows that the role of the school is very important to succeed in the culture of innovation in the T&L of teachers.

"I am sure that if the school really wants to cultivate innovation in teaching and learning in the classroom. So the school needs to seriously implement programs to help teachers innovate, provide appropriate needs and aids." (PS/PI/11)

The results of the constraints of inculcating innovation in schools show that the majority of informants state aspects of the school itself that hinder the inculcation of innovation.

"The school places more emphasis on mastering the syllabus for exams, where all learning methods are given autonomy to the teacher, whether using innovation or general methods such as textbooks and whiteboards. If the culture of the school itself does not emphasize innovation, then teachers are not bound to implement it." (PS/PI/M/I7)

This finding indirectly contributes to an individualistic culture among teachers. Where the culture of innovation in school rests on the teacher's right to do or not, in this aspect, all the informants expressed the same view. Indeed, there is an individualistic attitude in the culture of innovation in the classroom.

"Yes! I have the autonomy to innovate in teaching and learning in the classroom. I am not forced, and all teachers are free to do it if they want to do it." (PS/IN/I3)

The findings clearly show that the role of the principal or school administrator is important in cultivating innovation in T&L. This finding proves that if the administrators do not practice the culture of innovation in schools. So, teachers are more inclined not to cultivate innovation in T&L in the classroom [54]. On the other hand, the cultivation of traditional practices is more the teacher's choice to implement T&L in the classroom.

"In my opinion, school administrators themselves need to cultivate innovation in teaching at school, that is, by providing a support system for teachers to innovate in teaching and learning" (PS/KS/I8)

In addition, the school administration, and aspects of inculcating innovation in T&L can be realized with full support from the Ministry of Education. The findings show that the majority of informants stated that the role of the ministry is very important to cultivate innovation in the T&L of teachers in schools.

"...the Ministry of Education plays an important role in cultivating innovation in teaching and learning in schools. The introduction of incentives and encouragement needs to be highlighted by the ministry in addition to providing support systems such as equipment, courses, and financial assistance to teachers." (PS/SKPM/I12)

Thus, the findings for this aspect of the school are traced to school culture, teacher practices, leadership, and the Ministry of Education's cultivation of innovation in T&L in schools. The findings clearly show that the practice of innovation is not cultured by the Ministry of Education and the school, which will cause the acceptance of teachers to innovate in T&L to be low [58]. This is because it is not a responsibility or requirement that teachers must perform in the classroom. This finding shows that teachers are free to innovate if they are interested, and it is placed as an individual skill (teacher).

4.2 The Recommendations to Cultivate Innovation in Teaching and Learning in Economics

Table 3: A summary of the thematic analysis of the suggestion to cultivate innovation in economic teaching and learning

Informant (I)	Cultivation of Innovation in Schools (PIS)			The role of Ministry of Education (KP)		
	Teacher (G)	Role of School (PS)	Provision of facilities (PK)	Support of Innovation (SI)	Cultivation of Research (PPY)	
I1	/	/	/	/	/	/
I2	/	/	/	/	/	/
I3	/	/	/	/	/	/
I4	/	/	/	/	/	/
I5	/	/	/	/	/	/
I6	/	/	/	/	/	/
I7	/	/	/	/	/	/
I8	/	/	/	/	/	/
I9	/	/	/	/	/	/
I10	/	/	/	/	/	/
I11	/	/	/	/	/	/
I12	/	/	/	/	/	/

Table 3 shows a thematic summary of suggestions for cultivating innovation in the T&L of economics teachers. The results are classified into 2 main categories of themes formed as a result of 5 sub-themes. The details of the suggested culture of innovation in the T&L of economics are detailed as follows:

4.2.1 The cultivation of Innovation in Schools

Referring to Table 3 shows that the majority of informants agree that the culture of innovation in schools should be carried out by teachers. These findings explain that teachers need to cultivate innovation in T&L in the classroom.

"For me, the role of inculcating innovation in teaching in the classroom rests with the teacher. Teachers themselves need to be prepared to always be motivated to innovate in teaching in the classroom." (PIS/G/I5)

Findings suggest that increasing the motivation of teachers to innovate can be done with the existence of coaching workshops to carry out innovation periodically.

"...one of the steps that can be taken to cultivate innovation among teachers is to organize regular innovation guidance workshops. This workshop will help teachers to generate ideas to carry out innovations in teaching in the classroom." (PIS/G/M/I4)

Another step of cultivating innovation in T&L needs to be frolicked by the school. All school staff need to work together to bring innovation to life in teaching. Findings show that the majority of informants stated that school leadership needs to play a role in cultivating innovation.

"I think that school leadership plays an important role in cultivating innovation in teaching. Where the school is responsible for organizing a culture of innovation by holding competitions and rewarding innovative teachers." (PIS/PS/I11)

This finding explains that in order to cultivate innovation in T&L in schools, it can be done in the form of a rivalry or to reward teachers who innovate in T&L. This culture will increase the enthusiasm of teachers to provide innovation in T&L. In addition, it turns out to be an added value to the source of innovation in the field of economics and also can be used as a source of creative learning in the field of economics. The benefit to students is that they can increase focus and enjoy being in class.

4.2.2 The Role of the Ministry of Education

The findings show that an important role in cultivating innovation in the T&L of economics teachers needs to be implemented by the Ministry of Education (see Table 3). The results show that the majority of informants think that it is necessary to provide facilities, support innovation, and cultivate research. Looking at the aspect of providing facilities is very important for teachers to innovate in teaching.

"I think the education ministry needs to provide facilities such as the provision of equipment and tools to innovate in the classroom. For example, the introduction of DELIMA and other digital learning platforms require electronic

equipment to be used and provide innovation in learning. The ministry can supply each teacher with this electronic equipment to be used in learning activities in the classroom." (KP/PK/I3)

In addition to the provision of facilities such as electronic equipment, the informant also stated that aspects of innovation support, such as workshops, should be carried out by the Ministry of Education continuously. This step will give the impression that the ministry takes seriously the culture of innovation among teachers in schools.

"The ministry needs to provide support workshops for teachers continuously. This step will show that the Ministry of Education is serious about the culture of innovation in teaching and learning." (KP/SI/I6)

The findings also show that the culture of research is also seen as one of the elements that can cultivate innovation for the T&L of economics teachers in the classroom. For this aspect, almost all informants expressed their stance regarding research among teachers.

"I feel that research such as case studies applied by the Ministry of Education for teachers needs to be improved by encouraging teachers to carry out innovation to solve teaching and learning problems in the classroom." (KP/PPY/I6)

This finding clearly reveals that teachers need to be more creative in conducting case study research by creating innovative ideas to solve T&L problems in the classroom. The findings also show that the informant suggested that research activities that can successfully produce innovation should be appreciated and used as a guide for other teachers to improve.

"...research that succeeds in creating innovation needs to be appreciated by the Ministry of Education by giving appreciation and making it a reference record to be improved by other teachers." (KP/PPY/M/I11)

The results clearly show that teachers really expect appreciation from the ministry for their efforts to produce innovation in teaching and learning. Teachers also sincerely hope that the results of the innovation produced can be used as a reference for other teachers and be improved according to the research context. This finding is in line with the suggestion of enculturation of research among teachers [59].

5 Conclusion

The culture of innovation within the teaching and learning practices of economics teachers in Malaysia is currently constrained. Consequently, a qualitative survey was conducted to explore the impediments to embracing the culture of innovation in teachers' instructional methods. The study aimed to identify recommendations to fortify the culture of innovation among economics teachers. The comprehensive findings reveal various constraints hindering the acceptance of innovation in teaching and learning, including inadequate facilities in schools, time constraints, limited technological literacy, and a deficient school administration culture. In summary, the overall findings emphasize the imperative need to enhance teachers' attitudes and interest in innovation through human development and professional aspects.

Funding statement

This work was supported by the Universiti Kebangsaan Malaysia under the research grant of GGPM-2022-020 and GG-2023-010.

References

1. Oke, A., & Fernandes, F. A.P. (2020). Innovations in Teaching and Learning: Exploring the Perceptions of the Education Sector on the 4th Industrial Revolution (4IR). *Journal of Open Innovation: Technology, Market, and Complexity*, 6(2),31. <https://doi.org/10.3390/joitmc6020031>
2. Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). *Implications for educational practice of the science of learning and development*. *Applied Developmental Science*, 24 (2), 97-140, DOI: 10.1080/10888691.2018.1537791
3. Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. Routledge.
4. OECD. (2019). Innovative Learning Environments. Retrieved from <https://www.oecd.org/education/cei/innovativelearningenvironments.htm>
5. Bereiter, C., & Scardamalia, M. (2014). *Knowledge building and knowledge creation: One concept, two hills to climb*. In A. Hargreaves, A. Lieberman, M. Fullan, & D. Hopkins (Eds.), *Second International Handbook of Educational Change* (pp. 689-704). Springer.
6. Ministry of Education Malaysia. (2017). KSSM Economics Curriculum Specifications. Retrieved from <https://www.moe.gov.my/muat-turun/kenyataan-media/kenyataan-media-kementerian-pendidikan-malaysia/2017/item/1055-kssm-ekonomi>
7. Abdullah, N. A., Yusof, N. M., & Mohd Nor, N. F. (2019). The use of technology in teaching and learning economics: A systematic literature review. *International Journal of Academic Research in Business and Social Sciences*, 9(12), 180-191.
8. Mohd Nor, N. F., Abdullah, N. A., & Yusof, N. M. (2020). Innovative teaching and learning practices in economics education: A systematic literature review. *Journal of Critical Reviews*, 7(13), 1-9.
9. Fidalgo-Blanco, A., & Sein-Echaluce, M. L. (2019). TEEM 19. Track 12: Educational Innovation. *TEEM'19: Proceedings of the Seventh International Conference on Technological Ecosystems for Enhancing Multiculturality*, 687-688. <https://doi.org/10.1145/3362789.3362955>
10. Naz, F. (2019). Innovative Teaching: An Effective Ingredient for Educational Change at University Level. *Pakistan Journal of Education*, 36(2). <https://doi.org/10.30971/pje.v36i2.691>
11. Mykhailyshyn, H., Kondur, O., & Serman, L. (2019). Innovation of Education and Educational Innovations in Conditions of Modern Higher Education Institution. *Journal of Vasyl Stefanyk Precarpathian National University*. 5(1), 9-16. <https://doi.org/10.15330/jpnu.5.1.9-16>
12. Fraser, S. (2019). *Understanding innovative teaching practice in higher education: a framework for reflection*. *Higher Education Research & Development* (Routledge), 38 (7), 1371-1385. <https://doi.org/10.1080/07294360.2019.1654439>

13. Rahmat, N. H. (2020). Innovation in education: barriers and facilitating factors. *European Journal of Education Studies*, 6(10), 55-66. <https://doi.org/10.5281/zenodo.3596994>
14. Anaktototy, K. (2023). Promoting Creativity and Innovation in the Teaching and Learning Process. *Edu Sciences Journal*, 4(1), 59-66. <https://doi.org/10.30598/edusciencevol4iss1pp59-66>
15. Dawson, S. (2023). Embracing uncertainty and complexity to promote teaching and learning innovation. *Pacific Journal of Technology Enhanced Learning*, 5(1), 15-16. <https://doi.org/10.24135/pjtel.v5i1.171>
16. Esa, M. S., Ationg, R., Ibrahim, M. A., Muis, A. M. R. A., & Othman, I. W. (2022). Projek Inovasi Sekolah: Elemen Kearifan Tempatan Dalam Pengajaran Dan Pembelajaran. *International Journal of Education, Psychology and Counseling*, 7 (47),834-846. <https://doi.org/10.35631/IJEPC.747061>
17. Cao, Y., Qian Bai, Q., & Huang, Y. (2022). Applied internet teaching innovation. *EDULEARN proceedings*. <https://doi.org/10.21125/edulearn.2022.0611>
18. Nyathi, V. S., & Mathwasa, J. (2022). Educational Preparedness for Virtual Teaching and Learning during COVID-19 Lockdowns: Implication for Policy Innovation. *Randwick International of Education and Linguistics Science Journal*, 3(2), 210-220. <https://doi.org/10.47175/rielsj.v3i2.473>
19. Stumbrienė, D., Jevsikova, T. & Kontvainė, V. (2023). Key factors influencing teachers' motivation to transfer technology-enabled educational innovation. *Educ Inf Technol*, 1-35. <https://doi.org/10.1007/s10639-023-11891-6>
20. Maldonado-Mariscal, K., & Alijew, I. (2023). Social innovation and educational innovation: a qualitative review of innovation's evolution. *Innovation-the European Journal of Social Science Research*, 36 (3),1-26. <https://doi.org/10.1080/13511610.2023.2173152>
21. Osipovskaya, E., Dmitrieva, S. (2022). *The Issue of Adaptive Learning as Educational Innovation*. In: Bylieva, D., Nordmann, A. (eds) *Technology, Innovation and Creativity in Digital Society. PCSF 2021*. Lecture Notes in Networks and Systems, vol 345. Springer, Cham. https://doi.org/10.1007/978-3-030-89708-6_50
22. Paredes, S.G., Vázquez, N.R. (2020). Is holographic teaching an educational innovation? *Int J Interact Des Manuf* 14, 1321–1336. <https://doi.org/10.1007/s12008-020-00700-w>
23. Bello, M. B. (2022). Relevance of Economics Teacher Education Curriculum Contents in the Teaching of Senior School Economics in Nigeria. *KDU journal of multidisciplinary studies*, 4(2), 30-42. <https://doi.org/10.4038/kjms.v4i2.49>
24. Bassi, M., Meghir, C., & Reynoso, A. (2020). Education Quality and Teaching Practices. *The Economic Journal (Oxford Academic)*,130 (631),1937-1965.
25. Fu, Y. (2019). A “Maker Education + SPOC” Teaching Model for College Political Economics Courses. *International Journal of Emerging Technologies in Learning (ijet)*, 14(3), 139-150. <https://doi.org/10.3991/ijet.v14i03.10103>
26. Cook, S., & Elliott, C. (2016). *Innovations in Economics Education: An Introduction to Economic and Econometric Tools for Teaching and Learning*. *Cogent economics & finance (Cogent)*, 4 (1), 1180038-1180038. <https://doi.org/10.1080/23322039.2016.1180038>
27. Jam, N. A. M., & Puteh, S. (2022). Industry Relations and Innovative Teaching - Learning Approach Towards Education 4.0 in Malaysia. *Proceedings of the 2022 6th*

- International Conference on Education and E-Learning*, 189–196.
<https://doi.org/10.1145/3578837.3578865>
28. Adams, D., & Muthiah, V. (2020). *Teacher Education in Malaysia: Practices, Challenges and Future Trends for the Twenty-First Century*. In: Pushpanadham, K. (eds) *Teacher Education in the Global Era*. Springer, Singapore.
https://doi.org/10.1007/978-981-15-4008-0_9
 29. Mohamed, S., Kamis, A., & Norhayati Ali, N. (2017). Gauging the assessment literacy of Malaysia's home economics teachers: An empirical study. *Geografia: Malaysian journal of society and space*, 12(3), 130-138.
 30. Choy, S. C., Yim, J. S-C., Sedhu, D. S., & Nudin, A. B. (2021). Reflective practices for quality education in Malaysia: A mixed method approach. *International Conference on Management, Social Sciences & Humanities (ICMeSH 2020)*, 124, 0700.
<https://doi.org/10.1051/shsconf/202112407006>
 31. Tee, M.Y., Samuel, M. (2017). *Teachers and Teaching in Malaysia*. In: Samuel, M., Tee, M., Symaco, L. (eds) *Education in Malaysia. Education in the Asia-Pacific Region: Issues, Concerns and Prospects*, vol 39. Springer, Singapore.
https://doi.org/10.1007/978-981-10-4427-4_6
 32. Tan, L. (2011). *Comparison of PBL and the Traditional Teaching Method in the Teaching of Economics*. In: Jin, D., Lin, S. (eds) *Advances in Computer Science, Intelligent System and Environment. Advances in Intelligent and Soft Computing*, vol 106. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-23753-9_91
 33. Dulleck, U., & Tang, T. (2009). Teaching the economic way of thinking - a new approach to teaching introductory economics in a business degree. In Tang, T, Robinson, T, & Fletcher, A (Eds.) *ATEC2009 14th Annual Australasian Teaching Economics Conference. School of Economics and Finance, Queensland University of Technology*, Australia, pp. 61-71.
 34. Moreira, S. B., & Crespo, N. (2012). Development Economics from the Traditional Approaches to the New Concepts. *International Conference "New Challenges of Economic and Business Development*, 428-440.
 35. Bennett, D., McCarty, C., & Carter, S. (2011). Teaching Graduate Economics: Online Vs. Traditional Classroom Instruction. *Journal for Economic Educators*, 11(2),1-11.
 36. Bennett, D., Padgham, G.L., McCarty, C.A., & Carter, M. (2007). Teaching Principles of Economics: Internet Vs. Traditional Classroom Instruction. *Journal of Economics and Economic Education Research*, 8 (1), 21.
 37. Balmes, S. R. (2022). Technology Integration and Transformative Innovation in Education. *International journal of research publications*, 106 (1), 204-208.
<https://doi.org/10.47119/IJRP1001061820223743>
 38. Li, H., & Ma, J. (2023). Research on the Integration of Professional Education of Construction Engineering Technology and Innovation and Entrepreneurship education. *Contemporary Education and Teaching Research*, 4(4), 165–170.
<https://doi.org/10.47852/bonviewCETR2320895040>
 39. Lipayon, I. C. (2022). Innovation and Integration of Technology Livelihood Education (TLE): A Transition to Educational System in the 22nd Century. *East African scholars journal of education, humanities and literature*, 5 (2), 28-38.
<https://doi.org/10.36349/easjehl.2022.v05i02.001>
 40. Sein-Echaluce, M. L., Fidalgo-Blanco, Á., & Alves, G. (2017). *Technology behaviors in education innovation*. *Computers in Human Behavior*, 72, 596–598.
[doi:10.1016/j.chb.2016.11.049](https://doi.org/10.1016/j.chb.2016.11.049)

41. Lu, H., Chen, F., & Song, X. (2023). Innovation and Entrepreneurship in Collaborative Education in Colleges and Universities. *South Asian Journal of Social Studies and Economics*, 18(2), 14–21. <https://doi.org/10.9734/sajsse/2023/v18i2652>
42. Leung, A., & Nakagawa, H. (2021). Exploring Collaborative Learning in Economics with Visual Aids. *Journal of Economics Teaching*, 6(1), 53–69.
43. Sandland, J. G., Wankerl, A., Terminel, A. Q., Capetillo A. J. C., & Flores, D. S. (2020). Collaborative Learning for Innovation Education. 2020 *IEEE Global Engineering Education Conference (EDUCON)*, Porto, Portugal, 630–637. doi: 10.1109/EDUCON45650.2020.9125403.
44. Manion, H. K., Dyck, T., Thackeray, S., & Shah-Preusser, N. (2020). *Teaching Innovation Through Collaborative and Team-Based Learning*. IGI Global bookstore, 43–56. DOI: 10.4018/978-1-7998-2943-0.ch003
45. David Hoyos, D., Sigüenza, W., Capellán-Pérez, I., Campos, A., & David Álvarez-Antelo, D. (2019). A collaborative game-based learning to enhance ecological economics teaching. *5th International Conference on Higher Education Advances (HEAd'19)*, 505–512. <http://dx.doi.org/10.4995/HEAd19.2019.9468>
46. Gatrell, D. (2022). Challenges and opportunities: Videoconferencing, innovation and development. *Studies in Technology Enhanced Learning*, 2(2). <https://doi.org/10.21428/8c225f6e.f347ddf1>
47. Shulman, L.S. (2016). Educational Innovation with Open Eyes and No Excuses: The Challenges and Opportunities of Learning from Experience. *REGIES: Revista de Gestión de la innovación*, 1(1),13–28.
48. Yordanova, Z. (2020). Gamification for Handling Educational Innovation Challenges. In: Ashmarina, S., Mesquita, A., Vochozka, M. (eds) *Digital Transformation of the Economy: Challenges, Trends and New Opportunities. Advances in Intelligent Systems and Computing*, vol 908. Springer, Cham. https://doi.org/10.1007/978-3-030-11367-4_53
49. Chen, Y., & Roldan, M. (2021). Digital Innovation during COVID-19: Transforming Challenges to Opportunities. *Communications of the Association for Information Systems*, 48, pp-pp. <https://doi.org/10.17705/1CAIS.04803>
50. Mozelius, P., Bader, S., Jaldemark, J., Urbansson, P., & Engström, A. (2022). Educational Development - Challenges, Opportunities, Tools and Techniques. *European Conference on e-Learning*, 21(1), 264–271. <https://doi.org/10.34190/ecel.21.1.626>
51. Cleland, J. A. (2017). The qualitative orientation in medical education research. *Korean Journal of Medical Education*, 29(2), 61–71. <https://doi.org/10.3946/kjme.2017.53>
52. Braun, V., & Clarke, V. (2016). (Mis)conceptualising themes, thematic analysis, and other problems with Fugard and Potts'. *International Journal of Social Research Methodology*, 19(6), 739–743.
53. Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative Research: A Guide to Design and Implementation (4th ed.)*. San Francisco, CA: Jossey Bass.
54. Johnson, D. (2017). The Role of Teachers in Motivating Students To Learn Davion Johnson. *Journal of Graduate Studies in Education*, 9(1), 46–49.
55. Hornstra, L., van der Veen, I., Peetsma, T., & Volman, M. (2015). Innovative learning and developments in motivation and achievement in upper primary school. *Educational Psychology*, 35(5), 598–633. <https://doi.org/10.1080/01443410.2014.922164>

56. OECD. (2016). *Innovating Education and Educating for Innovation*. OECD Publishing. <https://doi.org/10.1787/9789264265097-en>
57. Serdyukov, P. (2017). Innovation in education: what works, what doesn't, and what to do about it? *Journal of Research in Innovative Teaching & Learning*, 10(1), 4–33. <https://doi.org/10.1108/jrit-10-2016-0007>
58. Buntat, Y., & Lailinanita, A. (2012). Inovasi Pengajaran Dan Pembelajaran Dalam Kalangan Guru-Guru Teknikal Di Sekolah Menengah Teknik Dari Perspektif Guru. *Journal of Technical, Vocational & Engineering Education*, 6, 44–58. <https://doi.org/10.1097/00006223-200411000-00003>
59. Faizah, A. M. (2016). Kajian Tindakan dan Perkembangan Profesional Guru-guru di Malaysia: Cabaran dan Strategi. *Seminar Kebangsaan Majlis Dekan Pendidikan 2016*, 1–12. https://www.researchgate.net/publication/310773147_Kajian_Tindakan_dan_Pembangunan_Profesional_Guru-guru_di_Malaysia_Cabaran_dan_strategi/link/5836a3ab08ae74bb3aa3c18b/download