



# A Preliminary Study of Leadership and Innovation in Curriculum Change at Pre-University Programs in Malaysia

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SUBMITTED: 25 February 2026; REVISED: 26 March 2026; ACCEPTED: 30 March 2026

**ABSTRACT:** In the rapidly evolving landscape of higher education, the integration of Education 4.0 principles necessitates a transformative approach to curriculum development. This paper investigates the pivotal roles of curriculum leaders in managing curriculum changes within pre-university programs at two Malaysian higher education institutions. Employing a qualitative research methodology, this project involves in-depth interviews with key curriculum leaders, mainly the head of departments to explore their experiences and strategies in implementing innovative curriculum practices. The study aims to understand the differences in the roles that curriculum leaders play in leading and managing curriculum change and innovation specifically within pre-university level programs. The findings reveal that effective leadership is crucial in fostering a culture of innovation and continuous improvement. Curriculum leaders emphasised the importance of clear communication, comprehensive training, and a collaborative decision-making to address staff resistance and ensure successful implementation of changes to curriculum. Additionally, the study highlights the need for alignment between curriculum objectives and current educational trends, specifically in the context of digital marketing and critical thinking skills. This research underscores the significance of adaptive leadership in navigating the complexities of curriculum change, providing valuable insights for educational leaders and policymakers. Through embracing innovative practices and fostering a supportive environment for educators, institutions can enhance the relevance and effectiveness of their curricula, ultimately preparing students for the challenges of the modern workforce.

**KEYWORDS:** Curriculum change; education 4.0; adaptive leadership.

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## 1. Introduction

The transformation in the world of education has seen a shift towards educational and digital technologies due to the emergence of Education 4.0. This shift can be seen in the integration of technologies in the classrooms, curricula that emphasizes students soft skills development and continuous improvement to meet the demands of a rapidly changing world. The development and implementation of curriculum by curriculum leaders is important as

curriculum plays important role in shaping the learning experiences of students [1]. Hence, program coordinators and heads of departments as curriculum leaders play crucial role to lead and manage the change and innovation in curriculum in order to ensure relevance and effective delivery of educational programs and courses to students [2]. As curriculum leaders are the ones who are responsible to plan and carry out curriculum changes within their departments, they hold important roles to lead changes and have huge influences over the learning experiences of students and if students achieve the learning outcomes set by their programs of studies [3]. The aim of this research is to understand the differences in the role that curriculum leaders play in leading and managing curriculum change in innovation specifically within pre-university level programs in two different universities in Malaysia. By focusing on the pre-university level, this study aims to provide insights on the differences on the roles played by different curriculum leaders to understand their roles, experiences, challenges and strategies taken to manage curriculum change and innovation.

The objectives of this study include: [1] to examine the role of curriculum leaders in leading and managing curriculum change and innovation within pre-university level programs, [2] to identify the challenges faced by curriculum leaders in implementing curriculum change and innovation within pre-university level programs, [3] to explore the strategies employed by curriculum leaders to address the challenges faced and facilitate effective curriculum change and innovation within pre-university level programs, and [4] to compare and contrast approaches, priorities and effectiveness of curriculum leadership in driving curriculum change and innovation between two different higher learning institutions in Malaysia.

## 2. Background

In the context of Education 4.0, characterized by rapid technological advancements and evolving pedagogical approaches, the role of leadership in managing curriculum change and innovation is crucial. Curriculum leaders, comprising of administrators, school principals, head of departments and program coordinators are tasked with the responsibility of navigating these changes to ensure the delivery of relevant and effective educational experiences [4]. Curriculum change in this digital age is now characterized by its dynamic nature which is necessary to ensure that students can adapt to changing trends, emerging technologies and challenges they will faced once they have graduated from their studies [5]. Education 4.0 has placed emphasis on integrating technology into learning and teaching, importance of critical thinking skills and personalizing learning experiences in order to meet the variety of students needs [6]. Hence, curriculum leaders have to possess deep understanding of principles in teaching pedagogies, have knowledge and is willing to embed technological innovations in classrooms and be aware of educational trends in order to drive effective curriculum change and innovation within their programs in their universities [7].

### 2.1. Leadership approaches to curriculum change and innovation.

There are various leadership approaches that can facilitate an effective curriculum change and innovation in Education 4.0 classrooms. The first is transformational leadership which is particularly effective to foster a culture of change and innovation as well as bringing in a practice of continuous quality improvement. Transformational leaders are characterized by being visionary in leading their team towards success, can provide motivation and intellectual stimulation to their team members and while also considering the needs of individual staff

members [8]. In their team, a transformational leader is able to influence his/her team to experiment with new innovative teaching practices and to embed new innovation such as educational technology in teaching to enhance students learning [9]. Another type of leadership is known as the distributed leadership where the decision making and curriculum implementation responsibilities are being delegated to stakeholders who are affected by the curriculum change such as the educators, parents and industrial experts [10]. As each person has their strengths, this type of leader recognizes these and will distribute tasks and responsibilities according to each individual's strengths. In this way, the entire team under a distributed leadership can work together towards a common goal to improve the curriculum. As this leadership type takes into account the multiple point of views of all stakeholders in innovating the curriculum, this helps to promote a culture of inclusivity within the department.

### *2.2. Challenges and barriers to curriculum change and innovation.*

Although effective leadership can lead effective changes in curriculum change and innovation, there are still various challenges and barriers to curriculum changes. Among educators, it is common to have a certain staff members who are resistant to changes stemming from their fear of the unknown from the change and innovation, the lack of training provided to staff as well as the perceived loss of autonomy in the classroom and in teaching [11]. These factors impeded the much needed change in curriculum as well as impeding the innovation that students need in order to be ready for the IR4.0 world. Resources constraints to make changes happen such as limited funding and budget, access to technology, time constraints to learn new technologies and technology obsolescence also posed challenges to curriculum innovation efforts. Moreover, certain top-down instructions and mandates and policy directives may actually stifle creativity of educators in classrooms hence hindering the adoption of innovative teaching practices in the class [12].

### *2.3. Comparative perspectives on curriculum change.*

There are differences in approaches and priorities that are associated with curriculum change and innovation across national and international contexts. Developed countries such as Finland and Singapore where their educational systems are highly regarded for their innovation, placed strong emphasis on the professionalism of their teachers, continuous professional development and collaboration among stakeholders [13]. Schools in developed countries prioritize a holistic approach to education where they focus on nurturing the students' creativity, critical thinking and problem-solving skills which is closely aligned with the principles of Education 4.0. However, in the case of developing countries, schools often faced unique challenges to implement curriculum change and innovation due to limited resources and funding, deficiencies in terms of infrastructure as well as cultural barriers [14]. Despite these challenges facing schools in developing countries, there are initiatives and efforts that are aimed at leveraging the use of technology and partnership with the community to improve students' learning outcomes [15]. Within the 21st century classroom, it could not be denied that curriculum leaders play central role to manage curriculum change and innovation. Effective leadership approaches such as transformational and distributed leadership can empower team members to embrace new changes in the educational landscape, experiment with innovative teaching practices and to cultivate a culture of continuous improvement in order to not stay stagnant [16]. Although there are various challenges to ensuring that effective curriculum

change and innovation are being carried out, by having a comparative study where the role of two head of departments can be discerned, educators can have valuable insights into effective strategies and best practices to manage curriculum change and to foster positive educational outcomes for the benefits of students.

#### *2.4. Theoretical background.*

The theory that underpins this study on managing curriculum change and innovation is the theory of transformational leadership [17]. This theory posited that effective leaders are visionary, can inspire motivation with their team members, can stimulate their team intellectually such as encouraging creativity in teaching practices and critical thinking. These leaders also demonstrate empathy with their team members by supporting their individual team members' needs and concerns with regards to change [18]. These qualities in a transformational leader are important as they can inspire and empower their team members to work together towards a shared goal to drive successful organizational change and innovation. They are also able to communicate the benefits of change to their team members, hence enabling their team to embrace the new changes and carry out successful curriculum changes. Past studies have found that transformational leadership has brought about effective curriculum change and innovation. In [19], it was found that leaders with transformational qualities are more likely to foster innovation within their team, encourage collaboration and continuous improvement to ensure that curriculum stays relevant for students learning. Similarly, the paper [4] also concluded that transformational leaders facilitate the adoption of changes and innovation in curriculum by inspiring their team to embrace new changes, experiment with new teaching methodologies and utilizing technologies to enhance their students' learning experiences. Transformational leaders also provide visionary direction and motivational drive that are necessary to get their team to work together towards a common goal [20].

### **3. Research Methodology**

A qualitative research methodology is adopted by interviewing two head of departments from two different higher learning institutions. The interviewing method is carried out to explore and to understand the different roles played by the head of departments in managing curriculum changes and innovation within their own department in their respective institutions.

#### *3.1. Population and sampling technique.*

Two heads of departments from two universities offering pre-university programs are the population of this study. The sampling technique adopted is the purposive sampling technique as the aim of this study is to understand the role of curriculum leaders in managing curriculum changes. Hence, the head of departments of each institution are being chosen for the study to meet the objectives of this research.

#### *3.2. Data collection.*

The study utilized a semi-structured interview protocol for data collection. The questions for the interview are developed based on literature and consultation with experts in the field of leadership in curriculum and innovation. The semi-structured interview consists of 22 open-ended questions for the heads of departments to share their experiences and roles in managing

curriculum changes in their respective departments. The reason for adopting this method of interview is to ensure that there is flexibility to respond to the interviewees' responses and at the same time being able to be consistent to address the study's research objectives.

### *3.3. Context of the selected institutions.*

Both institutions chosen for this study will be dubbed Institution A and Institution B. Both institutions of higher education that have been chosen for this study have similar programs where they offered pre-university programs to students. The updates in the pre-university program standards by Malaysian Qualifications Agency (MQA) in 2019 necessitates comprehensive revisions to existing pre-university programs in both institutions. Both institutions have also gone through curriculum change and innovation in their pre-university program as a result of meeting the new educational standards and requirements which are set forth by the MQA in year 2019 for pre-university programs. In the new program standard, the standard for pre-university program has shifted to integrate critical thinking skills and mathematics subjects as core subjects into its pre-university programs. As both the institutions have done changes to their own programs based on the new program standard which is by including new units into their courses, it shows commitment and proactive approach by both institution curriculum leaders to align their program curriculum with the demands of MQA as well as Education 4.0 which emphasizes the importance of harnessing students' critical thinking skills. As a response to this change in pre-university program standard, the two selected education institutions have embarked on curriculum change and innovation initiatives aimed at enhancing the quality and relevance of their pre-university programs. Central to these initiatives is the inclusion of critical thinking and mathematics as core units, which reflects a deliberate effort of both universities to cultivate students' analytical abilities, logical reasoning and quantitative literacy in all fields of study.

This curriculum change process is categorized as perturbation. Curriculum review begins with a comprehensive review of existing program structures, contents and learning outcomes to identify areas for enhancement and alignment with MQA standards. The change in the program standards which necessitates the curriculum changes in pre-university program in both institutions is a form of perturbation as it is a disruption or disturbance that is introduced into the education systems to stimulate transformation in how students learn. By integrating the two new units, perturbation is introduced in the system that challenge the existing teaching and learning practices, program course structures, the number of units that have to be taken by students before graduating pre-university program and stimulate reflections in academic staff.

## **4. Findings**

### *4.1. Approaches to curriculum change and innovation.*

Through interviews with both institutions HoDs, the initial phase of the curriculum change involves consulting stakeholders such as the academic staff, educational experts from the degree programs, secondary school especially Form 5 school teachers for equivalency reports and industrial experts to gather their perspectives and insights into the area for improvement within the pre-university program curriculum. Through the discussions and collaborations with the stakeholders, certain key priorities are being identified such as the inclusion of consumer

mathematics into the mathematics syllabus in pre-university program which lays the groundwork for planning and implementation of the new pre-university curriculum.

Another finding from the interview shows that once the need for curriculum change has been established by both institutions, the HoDs and Deans of the School and Faculty will embark on a systematic process to redesign their pre-university curriculum. The HoDs will discuss with their team members to revisit the program learning objectives (PLOs), revise their course learning outcomes (CLOs) and map the PLOs and CLOs to the institution's graduate attributes as well as to Malaysian Qualification Framework (MQF) 2.0 in order to be align with MQA standards. The key changes include the development and integration of new units into the pre-university programs such as critical thinking and mathematics across all pre-university programs.

Both institutions also utilize diverse range of pedagogical approaches such as student-centered learning, varying instructional strategies and embed educational technologies to ensure that students are engaged with learning and to improve their student experience in universities. The emphasis is on active learning and problem solving so as to empower students to be active participants in their own learning journeys. Also, both institutions have encouraged the use of digital resources and learning management system such as Moodle and Canva; online learning platforms; educational technologies such as Kahoot! to increase students' engagement in classes and to cater to students diverse learning styles.

From the interviews, both head of departments have provided continuous professional development opportunities to support their team members to embrace the change in the new curriculum especially in teaching new units effectively and integrating technologies in the classrooms. The curriculum changes and innovation implemented by both institutions reflect their commitment to be aligned with MQA program standards to meet the changing needs of students in the 21st century. The next section provides a comparison of the role of both institutions HoDs in managing the curriculum change and innovation within their department.

#### *4.2. Comparison of the role of curriculum leaders in managing curriculum change and innovation.*

Two heads of departments (HoDs) from two different universities were selected as the sample of this study. This will be dubbed as HoD from Institution A and Institution B.

##### *4.2.1. Institution A.*

The HoD of Institution A approach to curriculum change and innovation is comprehensive and strategic as the HoD aims to ensure that there is an effective development, implementation and evaluation of the curriculum changes within the department. First, in the interview, the HoD emphasizes the importance of being aware and staying informed on the current trends that is happening in the higher education by communicating with stakeholders such as academic staff, industry experts and MQA auditors on accreditation requirements to get to know the new information on program standards. Next, the HoD highlighted the main changes that is happening in the curriculum which is the integration of Mathematics and Critical Thinking subjects into the pre-university program to cater new program standard from MQA. In ensuring that these subjects will be developed well and with proper expertise, the HoD has hired new staff to develop the Critical Thinking unit. Other than that, the HoD has also spearheaded the

updates on courses contents to include critical thinking to enhance interdisciplinary collaboration within all the subjects within the pre-university program.

In the preparation for the change in curriculum, the HoD together with the management team worked out the changes necessary together and once the changes are confirmed, a school meeting was held to communicate the required changes to all staff. The HoD placed significant emphasis to prepare all staff for the curriculum changes by encouraging staff to go for professional development workshops that are related to the new curriculum and provided ongoing communication with the staff in the transitioning period to new curriculum. When asked regarding the strategies that the HoD adopted when faced with challenges such as staff resistance to change or resources constraints, the HoD addresses the challenges through open communication and compromise where the HoD took the staff concern seriously and assist them by providing necessary guidance and monitoring such as linking them with proper mentors who can help them with the inclusion of new contents into their subjects.

In order to ensure that there is implementation of curriculum changes and that staff do not go back to the old practice and old curriculum, the HoD has put in place a performance development review at the end of every year. For staff who are open to embrace the change and give evidence to changes that are carried out with students, the staff will be rated as Outstanding and will receive increments from the Institution management in the next academic year. Also, the HoD interviewed random students from classes to gain feedback from them regarding the new curriculum taught. Through students' feedback and progress reports, the HoD will know if the implementation of curriculum is being carried out in the entire semester. It took around half a year for the HoD of Institution A to get the whole team together to embrace the change. With ongoing support and effective communication with staff, the degree of acceptance of the change ranges from medium to high for the staff in this institution.

#### *4.2.2. Institution B.*

Institution B's HOD has a more complex role within the institution compared to the responsibilities of Institution A HoD. The HoD in Institution B is responsible to design new courses to monitoring program development and as well as managing curriculum changes. The leadership responsibility given to HoD in Institution B position includes designing new courses as well as to ensure the relevance of existing programs in the departments by liaising with industry to ensure that the curriculum designed is relevant and aligned with industry needs. Also, the HoD is also responsible to plan and involve in marketing activities, marketing strategies, roadshows and online recruitments in order to attract students to the management program of the institution.

The HoD in Institution B also always monitored the changes that happens in higher education in order to follow the current trends in this industry. When there are changes in the program, the HoD will ensure that changes are being carried so that the contents of the program remains up-to-date with the industry and accreditation standards. The HoD led the team to modify the Course Learning Outcomes (CLOs) and Program Learning Outcomes (PLOs) so that the newly changed and modified curriculum can equip students with skills that are demanded in the workforce and industry. The HoD also recognize the need to adapt the topics and syllabus of the curriculum to align with the shift and changes in PLOs and CLOs such as updating their marketing course content to reflect contemporary trends like digital marketing.

The HoD in Institution B also plays an important role in facilitating effective curriculum change management by meticulously preparing the staff through transparent communication and ensuring that the staff attend training sessions arranged for them to embrace the curriculum change. The HoD also communicates with the staff on the rationale behind the curriculum change and innovation. Special briefing with staff is also organized to hear the opinions from staff on the curriculum change such as their suggestions as well as their cause of concerns.

While implementing curriculum change, the HoD in institution B faced several challenges from the staff such as staff resistance to change and time constraints. The HoD requires the department staff to attend training directly under MQA annually in order for the staff to understand the reasons behind the changes in curriculum and innovations. Also for staff who are reluctant to the changes, even after persuasion from the HoD, the HoD will use the authority bestowed to force the staff to accept the change.

## **5. Comparative Analysis of HoD from Institution A and Institution B**

Referring to the two interviews conducted with the two HoDs, they reveal several similarities and differences in how they manage curriculum change and innovation. In terms of the responsibilities and jobscope, both HoDs have the same responsibility to oversee curriculum development, managing changes required by industry and accreditation requirements and to ensure that the curriculum within their department is aligned with industry needs. However, the HoD in Institution B holds a larger responsibility compared to HoD in Institution A which includes designing new courses for the department, monitor the progress of program development, industry liaison as well as being involved in marketing strategies and roadshow to bring students to the institution. HoD in institution A has a narrower focus in terms of job scope which focus primarily on the curriculum changes within the department.

The examination of the roles of HoDs in managing curriculum change and innovation revealed distinct approaches and leadership styles employed by the two educational institutions. Institution A adopted a centralized approach, with the HoD playing a proactive and directive role in guiding and coordinating curriculum change initiatives. In contrast, Institution B embraced a decentralized approach, empowering faculty members to take ownership of curriculum change initiatives and fostering a culture of autonomy, creativity, and collaboration.

There is a similarity in that both HoDs in both institutions rely on the stakeholders' feedback such as industry experts and MQA to identify the need for curriculum changes. Additionally, the HoD from Institution B also monitors the current trends in higher education in order to be informed on the changes that is happening in the field. Thirdly, both HODs play pivotal roles in initiating and driving curriculum changes within their respective departments. While the first HOD actively designs and implements new courses, the second HOD focuses on implementing changes within existing programs.

Regarding staff preparation and support, both HODs prioritize equipping their staff with the necessary skills and understanding to adapt to curriculum changes. While both emphasize training sessions, briefings, and ongoing support, the first HOD places particular emphasis on transparent communication and involvement in decision-making processes to ensure staff buy-in. Addressing resistance among staff is another common challenge encountered by both HODs. They tackle this challenge through open dialogue, active listening, and clear communication of the benefits of the changes. However, the first HOD also mentions specific

concerns such as time constraints and fear of accepting changes, particularly regarding teaching strategies and assessment methods.

Both HODs oversee the implementation of curriculum changes and monitor progress and feedback from stakeholders. While the first HOD emphasizes planning and collaboration with the curriculum committee to ensure effective implementation, the second HOD stresses the importance of continuously monitoring staff progress to prevent reverting to old practices. In terms of the degree of acceptance of curriculum changes among staff, the first HOD perceives it initially as medium but endeavors to push it towards high through leadership and authority. On the other hand, the second HOD emphasizes continuous monitoring and addressing resistance as essential factors in ensuring successful implementation.

The findings of this study have several implications for educational leaders, policymakers, and practitioners. Firstly, they underscore the importance of leadership in driving curriculum change and innovation within educational institutions. Effective curriculum leaders play a crucial role in providing vision, guidance, and support to navigate the complexities of curriculum change and foster a culture of innovation and continuous improvement.

Furthermore, the study highlights the need for understanding of leadership approaches and styles that best align with the unique contexts and priorities of educational institutions. While centralized leadership may offer advantages in terms of coordination and alignment, decentralized leadership promotes autonomy, ownership, and creativity among faculty members. This study also provides the basis for further area for research to examine and study the roles of educational leaders in managing curriculum changes and innovations. Since this study has limitations such as the number of key informants, this is an opportunity for further research to consider the methodological approaches to interview more curriculum leaders that are tasked with managing curriculum changes. Future studies could also use qualitative and quantitative methods of data collection to explore in-depth the roles of curriculum leaders in managing curriculum changes and innovations. In summary, both HODs play critical roles in managing curriculum change and innovation within their departments. While their roles may vary in scope, their approaches to staff preparation, addressing resistance, and ensuring implementation share commonalities in emphasizing communication, training, and ongoing support.

## 5. Conclusion

This study explored the role of curriculum leaders in managing curriculum change and innovation within pre-University level programs in two educational institutions. Through a comparative analysis of the approaches, strategies, and challenges faced by heads of departments, this study provides insights into the roles of leading curriculum change initiatives. The findings demonstrate that both HoDs play central roles in initiating, coordinating, and sustaining curriculum reforms in response to accreditation requirements and industry expectations. While both leaders emphasize stakeholder consultation, alignment with program standards, revision of PLOs and CLOs, staff training, and continuous monitoring, their leadership approaches differ in scope and execution. Institution A adopts a more centralized and directive leadership style, focusing primarily on curriculum implementation within the department. In contrast, Institution B reflects a broader and more complex leadership role that includes industry liaison, course design, and marketing responsibilities. Overall, effective

communication, stakeholder engagement, professional development, and systematic monitoring emerge as critical factors in ensuring successful curriculum change and innovation.

### Competing Interests

The authors declare that there are no competing interests regarding the publication of this paper.

### Author Contributions

All authors contributed equally to this work. All authors have read and approved the final version of the manuscript.

### Data Availability

All data analyzed in this study are included in this published article. The literature sources used are available from the corresponding author upon reasonable request.

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