# Digital transformation and innovation for enhancing the performance of primary schools in Malaysia

## Transformasi dan inovasi digital untuk meningkatkan kinerja sekolah dasar di Malaysia

Abdullah Ibrahim<sup>10</sup>, Mohd Johari Jusoh<sup>10</sup>, Norazura Tahir<sup>10</sup>, Shamsida Suriyam Binti Hamzah<sup>10</sup> & Muhajir Tasilkhan<sup>20</sup>

<sup>1</sup>Faculty of General Studies and Advance Education, Universiti Sultan Zainal Abidin <sup>2</sup>Faculty of Education, Dr. Soetomo University Address: <sup>1</sup>Kampung Gong Badak, 21300, Terengganu, Malaysia <sup>2</sup>Jalan Semolowaru No.84, Menur Pumpungan, Kec. Sukolilo, Surabaya, Jawa Timur 60118, Indonesia E-mail: abdullahibrahim@unisza.edu.my

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#### Abstract

The digital transformation presents a unique and powerful avenue for enhancing the leadership role of headmasters in primary schools in Malaysia. The technological transformation at primary schools has encompassed integrating digital tools to streamline administrative processes, faster communication, and foster decision-making. The purpose of the current study is to find out the effect and the role of the headmaster's innovative leadership style in utilizing digital tools and adopting the technologies for administrative roles. Furthermore, following the Malaysian Education Quality Standard (MEQS), the headmaster acts as a high-impact leader to mobilize and develop the school community in an integrated manner. The method used in this study is a quantitative method, with a data collection process through a survey of school principals, related to national schools in Kuala Nurus, and the surrounding areas. The findings show that adaptation digital tools enabling the data-driven approach, enhancing administrative efficiency, and improving the communication style facilitate more responsive and positive leadership roles. Therefore, this digital transformational approach ultimately pays for a better educational experience for students, and a more robust and adaptive learning school environment. This study also concluded that more digital transformation adaptation in primary schools will lead to improving the key performance indicators of schools in Malaysia.

Keywords: digital transformation; educational system; leadership styles; Malaysia vision; technologies and adaptation

### Abstrak

Transformasi digital menghadirkan cara yang unik dan ampuh untuk meningkatkan peran kepemimpinan kepala sekolah di sekolah dasar di Malaysia. Transformasi teknologi di sekolah dasar telah mencakup integrasi perangkat digital untuk menyederhanakan proses administrasi, komunikasi yang lebih cepat, dan mendorong pengambilan keputusan. Tujuan dari penelitian saat ini adalah untuk mengetahui pengaruh dan peran gaya kepemimpinan inovatif kepala sekolah dalam memanfaatkan perangkat digital dan mengadopsi teknologi untuk peran administratif. Lebih jauh, mengikuti Standar Mutu Pendidikan Malaysia (MEOS), kepala sekolah bertindak sebagai pemimpin yang berdampak tinggi untuk memobilisasi dan mengembangkan komunitas sekolah secara terpadu. Metode yang digunkan dalam penelitian ini adalah metode kuantitatif, dengan proses pengumpulan data melalui survei dari kepala sekolah, yang terkait dengan sekolah nasional di Kuala Nurus, dan daerah sekitarnya. Temuan menunjukkan bahwa adaptasi perangkat digital memungkinkan pendekatan berbasis data, meningkatkan efisiensi administratif, dan meningkatkan gaya komunikasi memfasilitasi peran kepemimpinan yang lebih responsif dan positif. Oleh karena itu, pendekatan transformasi digital ini pada akhirnya akan menghasilkan pengalaman pendidikan yang lebih baik bagi siswa, dan lingkungan sekolah yang lebih tangguh dan adaptif. Studi ini juga menyimpulkan bahwa adaptasi transformasi digital yang lebih besar di sekolah dasar akan mengarah pada peningkatan indikator kinerja utama sekolah di Malaysia.

Kata kunci: transformasi digital; sistem pendidikan; gaya kepemimpinan; visi Malaysia; teknologi dan adaptasi



### Introduction

Malaysian primary education serves as the foundation of the educational framework which fosters quality education and provides a holistic view of the country (Liew & Teoh 2022). of the role of leadership applying digital approaches for the assessment of educational quality standards among the management of national primary schools in the District of Kuala Nerus, Malaysia. The present study discussed the Malaysian Education Development Plan (PPPM), from 2013-2025, and it entered its last stages (Yaakob et al. 2022, Kenayathulla et al. 2024). The focus at the start of the third wave of implementation was for all schools, teachers, and headmasters to enhance the performance above the minimum standard. For instance, the Malaysian Ministry of Education (KPM) focused on expanding operations to foster a culture of peer leadership for professional excellence development (Zabidi & Admas 2022, Forfang & Paulsen 2024). The Ministry also shifted most schools to a new management model and prepared model schools based on teaching innovations style and digital adoption strategies.

The main goal of KPM is to develop a system of autonomous progress that can trigger innovation and increase achievement among schools. Therefore, referring to the role of the headmaster as discussed before, KPM has introduced the Malaysian Education Quality Standard Wave 2, which is also known as SKPMg2 (Din 2021), that aims to improve the quality of 'headmaster leadership' to ensure excellent school operation (Thien & Lee 2023). This aligns with the goals stated in Wave one of the PPPM plan of 2013-2015 (KPM 2016), which is to create a dedicated group of mentors for band five to seven schools and to strengthen the selection criteria for school leaders to improve school leadership quality by applying innovative approaches (PPPM).

Yang (2023), discussed the role of transformation leadership in public and private universities, which shows the diverse dimensions of leadership styles. While discussing the above scenario, leaders possess multiple types of leadership, which are not limited to his/her visionary, charismatic and role to bring change (Ladkin & Patrick 2022), and set a good role model for others in educational settings. Hui & Singh (2020), also proved that the leadership style practiced by a principal in a school will affect the school's effectiveness and efforts for improving the quality and effectiveness of the school, which can be accomplished through the administrators and school managers. The findings of their study show that principals in schools with a higher SKPMg2 rating practice a leadership style at a high level compared to principals in a school with a lower SKPMg2 rating practice a leadership style at a medium level, shows a relationship between leadership style and school effectiveness. Thus, through the SKPMg2, we expect that this model would enhance the leadership role and promote the effectiveness of the school management.

The concept of digital transformation and innovation has been utilized in this study. The digital transformation in education has revolutionized the leadership roles in Schools. For instance, headmasters play a dynamic role in driving this change, as their leadership directly impacts the standard procedure of quality education by KPM. The digital transformation and innovative headmaster role in the school management system have become essential for adequate performance and sustainability. In this stance, the KPM has introduced the SKPMg2 (KPM 2016) to enhance the Malaysian Education Quality Standard (SKPM). Hence, the five standards of SKPM in the program are the focus of evaluation in the categorization process of schools in Malaysia, and it is designed with a new format that replaces the SKPM with the same purpose of guiding the headmaster and school staff in improving management effectiveness and the educational delivery process (Selvaraja et al. 2021). Further, the innovative approaches contained in SKPMg2 are action-oriented, emphasize quality, and are evidence-based. The standards of SKPM can be fulfilled by the headmaster's leadership styles and their innovative role.

The evaluation of schools based on the above standards occurs throughout the year and involves the other school staff. It further offers five other innovative standards, and among them, one primarily focuses on the headmaster's leadership as a leader, mentor, and motivator for the school community. Bhattacharyya (2019), also proved that the leadership style practiced by a principal in a school will

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affect the effectiveness of the school and all efforts towards improving the quality and effectiveness of the school must be made through improving the leadership quality of the administrators and school managers. The findings of their study show that headmasters in schools with a higher SKPMg2 rating practice a leadership style at a high level compared to principals in a school with a lower SKPMg2 rating practice a leadership style at a medium level. This shows that there is a relationship between leadership style and school effectiveness based on SKPMg2 scores.

The findings of McCarley et al. (2020), found that transformational leadership supports maintaining a flexible school environment that fosters teacher ability and promotes more collective roles. For instance, Woods & Jeffrey (2019), also added that high-performing schools are inclined to transformational leadership practices, as compared to others. Hence, there is a huge different between the leadership role in promoting the vision and mission of the national educational policy. The school performance is highly linked with the leadership role, which is effective and useful for the quality standard of education within the team. The current argument aligned with the study of Adams & Velarde (2021), who also found that transformational leadership is more practiced among school leadership, as compared to transactional leadership. Thus, the present study fosters that, transformational and transactional leadership in schools are directly or indirectly significant to bring change. Therefore, the dimension of transformational practices is based on the situation of the schools and the interests of individuals.

The practice of transformational leadership should be increased among school administrators in Malaysia because it has been proven to be effective in increasing job satisfaction so that it can bring progress and excellence to a school (Mansor et al. 2021). Ibrahim & Khairuddin (2017), conducted a study in Sabah, Malaysia which found that the management in educational institutions is important to increasing job satisfaction among teachers. Even though, transformational leadership can also ensure organizational commitment and teacher efficacy. Therefore, the context of transformational leadership has positive association between the impact of teachers and the entire school environment and system.

The study on digital transformation and innovation style of headmaster leadership in primary schools of Malaysia are both compelling and crucial due to its relevance to the needs of education and its high potential to shape and maintain the educational system in the country. The present study is important as it examines how the leadership styles of headmasters play a pivotal role in navigating the transformation for fruitful outcomes. The valuable strategies for improving the leadership competencies of headmasters analyzing the innovative-focused leadership styles, the current study highlights the importance of a more technology-based adaptive school environment.

The role of the headmaster in enhancing the performance of primary schools through digital transformation and innovation is essential and dire needs to be considered for practical implications. The Malaysian Government offered reformulation of the 2010 SKPM with several improvements, revisions, and actions. This effort ensures the role of the headmaster as a high-impact leader who is capable of mobilizing and administering the school environment more cohesively to advance the school and improve teaching and facilitation quality (PDPC). The headmaster's innovative role is required to fulfill the SKPM plans for school improvement. It is essential to investigate the success and effectiveness of each planned strategy which is designed by the Ministry of Education, Malaysia.

Moreover, the headmaster may also require support mechanisms and cooperation from their subordinates to implement and design each planned agenda of the national plan. In this context, teachers and the management team are the executors of all these agendas. Therefore, the headmaster's innovative leadership style is also essential to strengthening ties with all teachers and school staff as coordinators, administrators, planners, and implementers (Ofojebe & Ezugoh 2010). In implementing SKPM, the innovative role of the headmaster falls under three main aspects, such as the role of headmaster as leader, mentor, and motivator. The headmaster's role in these three aspects is as follows in Table 1.

**Table 1.**Headmaster innovative role as leader, guider and motivator

Role	Brief
Headmaster as a Leader	The headmaster acts as a leader in all aspects of school management to ensure that the goals, objectives, mission, and vision.
Headmaster as a Guide	Improve individual efficiency and the quality of school management, while also guiding teachers and the staff to be more efficient and effective.
Headmaster as a Motivator	Increase the motivation of the school staff to carry out their responsibilities diligently and with quality, thereby contributing to student success and creating a quality school environment.
	Source: Author (s) created

The role and responsibilities of a headmaster's innovative leadership style are not just limited, which is presented in Table 1. Therefore, based on the above discussion in the literature, this study is conducted to identify the influence of the headmaster's innovative leadership style on the assessment of education standards determined by the Government of Malaysia for the management of national primary schools in District Kuala Nerus, Malaysia. Table 1 shows the innovative role of the headmaster leadership style, which can be strengthened by adopting new digital techniques to strengthen sustainable solutions and qualities of school management. The present study has two main objectives: (1) to identify the innovative role of the headmaster's leadership as a Leader, Guide, and Motivator, following the assessment of primary schools; (2) To analyze the implementation and transformation of SKPM in national primary schools based in the district Kuala Nerus, Malaysia.

#### Research Method

In this study, the researcher applied a quantitative research method approach. Fraenkel et al. (2000) examined the quantitative approach as one that emphasizes objectivity and is controlled through data collection and analysis. Thus, this research deployed this approach to test hypotheses and answer the research questions. The purpose of this research approach is to study the relationship between the dependent and independent variables in this research. Additionally, this study focused on descriptive and inferential data. This method is chosen because the researcher can better survey a larger sample, resulting in more accurate findings.

The data has been collected with the help of a self-administer questionnaire. The questionnaire was prepared with the support of extensive literature on the quality of education, standards, and assessment levels. This tool was designed to measure the level, pattern, effect, and moderating effect of the headmaster's innovative leadership style as a leader, guide, and motivator. The research instrument used is a questionnaire consisting of three sections. Section A contains the profile of the sample teachers (i.e., gender, age, length of service, academic qualifications, salary grade, position). The B part contains the headmaster's innovative leadership role as a leader (direction setting, addressing issues, digital transformation, instructional leadership, operational monitoring, and school improvement plans).

Further, section C consists of the headmaster's innovative role as a guide i.e., implementation team members, teachers, and leadership team. Another part of the questionnaire consists of the headmaster's role as a motivator role model, encouraging the school community for their input and fulfilling usual responsibilities. Lastly, section E contains the management of primary schools. Further, it analyses the assessment and transformation of SKPM in national primary schools based in District Kuala Nerus, Malaysia.

The criteria of the respondents were based on their innovative role as headmasters at primary schools and in this position for a period of the last three years. The researcher approached 278 headmasters, who showed a willingness to voluntarily participate in this study. All the respondents completed the survey and provided enough information regarding their roles and implementations. Before the data

collection, we completed verbal consent to participate in the study and ensured their response, and responses were anonymous. The study data was analyzed using Structural Equation Modeling (SEM) with the help of SPSS v.21 to examine the moderating effect of the headmaster's innovative role in the school's management and transformation of SKPM. The advantage of using SEM software is to identify the variance error in each variable tested.

The framework of the study also shows the variables and factors associated with the leadership style in the school environment. The positioning of these items was considered in conducting this study, specifically during the process of exploratory actor Analysis (EFA). The data has been categorized and re-arranged in Microsoft Excel, where each variable was coded. Further, all the data was imported into PLSmart for the analysis of Structural equation modeling (SEM). Schumucker & Lomax (2004), analyzed that, high reliability consists of two main models, such as measurement and structural models. A good fit of the test was also conducted to ensure the representation of all indicators is properly tested for analysis of two prerequisites of structure and confirmatory analysis.

The current study opted for the model of transformational leadership theory, which was offered by MacGregor Burns (1978), and was also developed by Bernard M. Bass (1980) (Kuhnert & Lewis 1987). The four core components of the theory portray that, the *charisma*-idealized leadership, the individual acts as a role model and ensures integrity, should have an inspirational motivation style, to fulfill the commitment and set high expectations among the group, intellectual stimulation is also important to encourage creativity and innovation, and individual support and mentorship is unique in fostering environmental and growth of learning. Filgona et al. (2020), show that effective teachers are among teachers who are highly motivated through their leaderships.

In Malaysian primary schools, the four pillars of transformational leadership are crucial to achieving excellence in academics and co-curricular activities. For instance, intellectual stimulation plays a vital role in evolving the educational landscape, such as the Ministry of Education programs to ensure the quality standards of education through the headmaster's transformational leadership and innovative planning. Even the Malaysian Education Blueprint 2013-2025, also emphasizes the leadership effectiveness in creating and focusing on the school performance. It can be fulfilled, through the headmaster leadership, principals and best practices to engage students and teachers. Litz & Blaik-Hourani (2020), also found that transformational leadership supports identifying challenges. However, the implement the model of Bruns, the current study also focused on the challenges that persist, for instance, recourse constraints and usual resistance to change the attitude of the organization and the staff. Therefore, effective transformational leaders play a key role in fostering a supportive culture in schools, building capacities and engaging the stakeholders. Thus, enabling the SKPMg2 can be useful for the quality of education and sustainable to strengthen schools' management in Malaysia.

### **Result and Discussion**

This part of the paper includes the results and data that were collected through a survey. It further shows the profile of the respondents, construct-based level analysis, and the effects of the headmaster's innovative leadership style based on the constructs of their role as a leader, such as setting direction, how to address problems/issues, instructional leadership, monitoring and operational mechanism, school improvement plans, and as a guider focused on the implementation of team members, teachers, and leadership team. Lastly, as a motivator, categorically focused as a role model, encouraging the school community to input and follow up strategies to ensure the implementation of their responsibilities on the assessment and transformation of SKPM in primary schools, Kuala Nerus, Malaysia. Moreover, to determine whether each construct has a specific level, the researchers established a guideline for the average value (mean score) based on the guideline by Kim Koh (2014) to determine the level of the headmaster leadership style and the assessment of primary constructs. The sample construct results are shown in Table 2.

**Table 2.**Average value (mean score) levels

No	Average Value (Mean Score)	Level
1	1.00 to 4.00	Low
2	4.01 to 7.00	Moderate
3	7.01 to 10.00	High

Source: Adapted from Koh (2014)

 Table 3.

 Analysis of innovative headmaster leadership style through SKPM

No	Construct	Average value	Standard Deviation	level
Α	Headmaster 's Innovative Leadership			
	1) Headmaster as a Leader			
	a) Setting Direction	8.7698	1.36821	High
	b) Addressing Problems / Issues	8.7835	1.35631	High
	c) Instructional Leadership	8.5928	1.56642	High
	d) Operational Monitoring	8.8576	1.18687	High
	e) School Improvement Plans	8.7504	1.25735	High
	2) Headmaster as a Guide			
	a) Implementation Team Members	8.9266	1.17240	High
	b) Teachers	8.9317	1.18879	High
	c) Leadership Team	8.8568	1.28869	High
	3) Headmaster as a Motivator			
	a) Role Model	8.8683	1.35830	High
	<ul><li>b) Encouraging School Community Input</li></ul>	8.9698	1.30667	High
	<ul><li>c) School Community Fulfilling Responsibilities</li></ul>	8.9518	1.23258	High
В	SKPMg2 Standard 1 Assessment	8.8885	1.30030	High

Source: Primary data

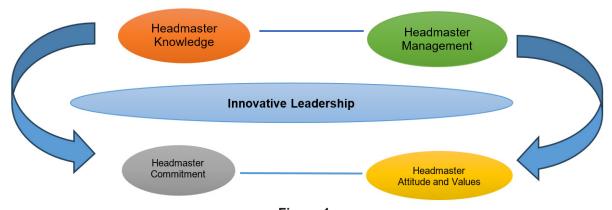
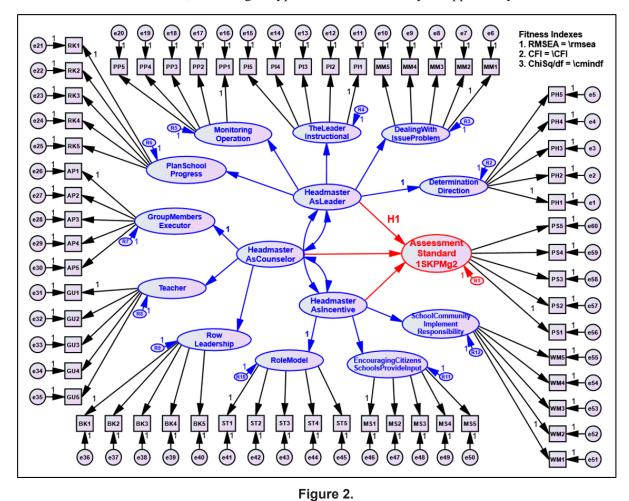


Figure 1.
Framework of the study
Source: Primary data, created by the author

Table 3 followed the model of Koh (2014) to investigate the frequency of the headmaster's innovative role in three different segments. The study found that the headmaster's innovative role in implementing the SKPM is significantly high in all aspects. However, numerically, the average and standard deviation vary. Further, analyzing the impact of the headmaster's innovative leadership style was based on his role as a leader (see Figure 1).

### **Testing of the hypothesis**

**Hypothesis (H1):** The impact of the headmaster's innovative leadership and transformative role as leader construct on SKPM assessment of school management. It further shows the analysis of the hypothesis (H1) innovative style of headmaster as Leader construct, indicating a significant effect on the management of national primary schools. Thus, based on the analysis in Figure 2 and Table 4, shows that the headmaster's innovative leadership style is based on their role as a leader, which has a significant impact on the assessment and transformation of the management of national primary schools as per the SKPM standards. The regression weight estimate (β) is 0.101, with a significance level of 0.000 (Estimate = 0.101, S. E. = 0.020, C. R. = 5.057, p < 0.001, Label = Significant). Furthermore, the data of this study shows that the headmaster leadership's innovative style has a positive and significant impact on the transformation and assessment of educational programs. Therefore, when the headmaster's innovative role as leader of construct increases by 1 (one) unit, there is an increase of 0.101 units in the SKPM assessment of construct. Thus, the testing of hypothesis H1 in this study is supported by the data collected.



Hypothesis 1 on headmaster innovative leadership and transformation of SKPM assessments as leader construct

Source: Primary data, created by the author

 Table 4.

 Regression coefficient, probability (p) values of headmaster as leader construct on SKPM

Construct	Construct	Estimate	S. E.	C. R.	Р	Label
SKPMg2_Standard_1_ <- Assessment	Headmaster role as a leader	0.101	0.020	5.057	***	Significant

Source: Primary data

**Hypothesis (H2)**: The headmaster's innovative leadership style as a guiding construct has a significant impact on the SKPMg2 standard 1 (one) assessment construct among the management of national primary schools in the district of Kuala Nerus, Malaysia.

Figure 3 above shows the analysis of hypothesis (H2) that the headmaster's innovative leadership style based on the headmaster as a guide has a significant impact and transformation of educational standards and assessments. Table 4, which estimates the regression weight ( $\beta$ ), is 0.287, with a significance level of 0.002 (Estimate = 0.287, S. E. = 0.093, C. R. = 3.077, p < 0.001, Label = Significant). The results obtained from Figure 2 and Table 4 of this study show that the headmaster leadership style as a guiding construct has a positive and significant impact on the transformation of educational programs. Therefore, the headmaster's innovative role as a guide construct increases by 1 (one) unit. There is an increase of 0.287 units in the SKPM standard 1 (one) assessment construct. Thus, the testing of hypothesis H2 in this study is supported by the research objectives and state of the art.

**Table 5**.

Regression coefficient, probability (p) values of headmaster innovative leadership style based on their role as guider

Construct	Construct	Estimate	S. E.	C. R.	Р	Label
SKPMg2_Standard_1_ <- Assessment	Headmaster role as a guider	0.287	0.093	3.077	0.002	Significant

Source: Primary data

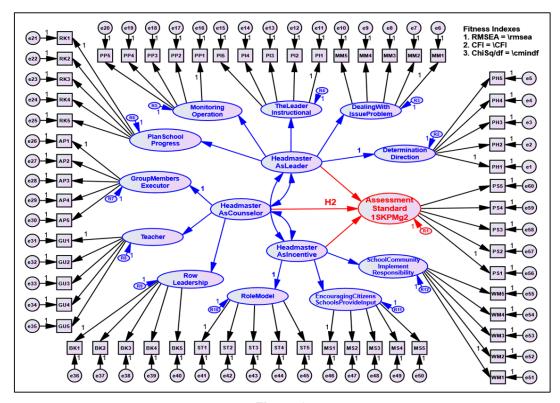


Figure 3.

Analysis of Hypothesis (H2) Impact of Headmaster 's Innovative Leadership Style as guider on SKPM Assessment Source: Primary data, created by the author

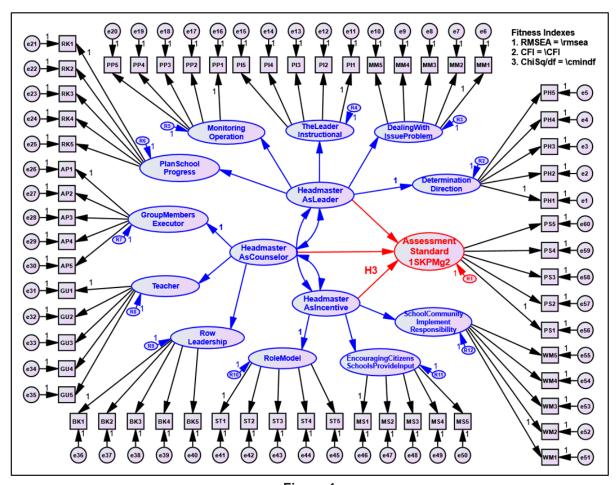
**Hypothesis (H3)**: The third hypothesis focused on the headmaster leadership style based on the headmaster as a motivator construct.

**Table 6.**Regression coefficient, probability (p) values of headmaster innovative leadership style as a motivator

Construct		Construct	Estimate	S. E.	C. R.	Р	Label
SKPMg2_Standard_1_ Assessment	<-	Headmaster's role as a motivator	0.673	0.059	11.472	***	Significant

Source: Primary data

Figure 4 shows the analysis of hypothesis (H3) that the headmaster's innovative leadership style is based on their role as a motivator for the transformation of educational programs. Table 6 also shows similar findings, and it indicates that the estimate for the regression weight ( $\beta$ ) is 0.673, with a significance level of 0.000 (Estimate = 0.673, S. E. = 0.059, C. R. = 11.472, p < 0.001, Label = Significant).



**Figure 4.** Headmaster innovative role as motivator construct

Source: Primary data, created by the author

The results from Figure 3 and Table 6 of this study show that the headmaster leadership style is based on the headmaster's innovative role as a motivator construct, which has a positive and significant impact on the assessment of educational programs and the transformation of the management of primary schools. Therefore, when their role as a motivator construct increases by 1 (one) unit, there is an increase of 0.673 units. Thus, the testing of hypothesis (H3) in this study is supported by the data collected.

### Impact of the headmaster's innovative leadership style

This present study identified the impact of the headmaster's innovative leadership style, which is based on his three significant roles as leader, guide, and motivator. These three roles significantly influence the SKPM assessment on the transformation and management of primary schools. The study concludes that their innovative role is crucial for evaluating SKPM among the teachers and other staff of the schools. The headmaster's digital transformation and innovative ideas of awareness to enhance their leadership style are essential based on the stated factors because of the influence of the headmaster's leadership, which is supportive and enhances the program's productivity. A headmaster who acts as a change agent and stimulates teachers to develop their talents and potential while also creating a positive work environment leads to committed and motivated teachers in their profession. A study conducted by Acton (2021) also reported that the school leaders are the change makers, who not only utilize digital approaches but also enforce the directions of educational programs. Li & Liu (2022) also suggest that an integrated model of transformational leadership and teacher role are important for student performance. Moreover, strengthening the capacities of the headmaster is essential to gain positive results in terms of quality education and management.

This study provides a clear view of the influence of the headmaster's innovative leadership style on effective management in schools. This is evidenced by the experiences and observations of teachers regarding the role of leader, guide, and motivator. O'Leary (2020), found that classroom observation is effective for teaching and learning. Further, their role as motivators has the most significant and highest impact on educational programs (SKPMg2) (Rahman et al. 2022). The higher performance in schools is typically led by a headmaster who can provide ideal influence, inspire motivation among subordinates, balance individual consideration, and offer intellectual stimulation to their subordinates. Tai & Kareem (2020) conducted a study on headmaster competencies, and they found that the role of the headmaster in Malaysian primary schools is essential and can foster the quality of education at the grassroots level. All of this contributes to the higher achievement of role teachers in primary schools. Siek (2022) conducted a study in Cambodia, which found that the academic management strategies in schools are based on innovative leadership skills. The practical and innovative style of school leadership acts as high-impact leaders capable of mobilizing and driving school staff together to enhance the school performance in the quality of teaching and supporting the overall development of students in various fields (Redín et al. 2023, Watterston & Zhao 2024). Furthermore, a flexible school administrator (headmaster) who can adapt leadership practices to different situations can increase teacher effectiveness in the school (Andrin et al. 2023).

The role of the headmaster is innovative leadership and transformative as a leader in SKPM assessment of school management. It further shows the analysis of the innovative style of the headmaster as a leader construct, indicating a significant effect on the management of national primary schools. Thus, to improve the school's environment and quality education, the headmaster may also give briefings/ workshops to members of the implementation group periodically related to tasks, give advice to teachers in meetings, and guide the leadership line according to needs or suitability or development in management meetings. The headmaster's innovative leadership style based on the headmaster as a guide has a significant impact and transformation of educational standards and assessments. The data shows that the regression weight ( $\beta$ ), is 0.287, with a significance level of 0.002 (Estimate = 0.287, S. E. = 0.093, C. R. = 3.077, p < 0.001, Label = Significant). Hence, the leadership role is depicted as a model for the teachers, allowing and adopting digital applications and giving information and appreciation verbally and in writing in meetings or gatherings or media held at the school. Additionally, headmasters must be able to adjust their innovative leadership style and practices to the school's circumstances and the needs of the teachers, using appropriate elements of leadership knowledge and wisdom.

This study added that the transformational leadership style of the headmaster, focusing on management, knowledge, commitment, attitude, and values, is crucial for effective Classroom-Based Assessment (PBD) among teachers. There is a strong need for headmaster to enhance their transformational leadership based on these factors to foster PBD among school teachers. This research aims to understand the role

played by Headmasters in implementing PBD and how their leadership style can develop teachers' competencies for student success. The study finds that the headmaster exhibits highly satisfactory transformational leadership practices.

This research establishes a significant relationship between the transformational leadership of the headmaster and PBD. Murtiningsih et al. (2019) added that there is a correlation between the supervision of the headmaster and interpersonal communication. The PBS represents continuous assessment within the education system. Adapting assessment methods to changing times and circumstances is essential. The implementation of PBS indicates progressive steps in the education and assessment system. There are various challenges in PBS implementation arise over time, but these shortcomings should not hinder embracing changes. Although time constraints for assessment due to curriculum demands pose challenges, these should not be excuses to neglect PBS implementation.

#### Conclusion

The current study examines the digital transformation and innovation style of the headmaster's role in enhancing the performance of primary schools in Malaysia. This leadership role in primary schools underscores the critical role that the headmaster plays in shaping the future of the country. The data highlights the necessity for headmasters to adopt the transformational and innovative style for effectively navigating the technology and strategies to improve the schooling environment. For instance, their focus on the management, delivery of knowledge and commitment is very crucial for classroom assessment. The regression analysis indicates that the headmaster's leadership style is based on the headmaster's innovative role as a motivator, and it does has a positive and significant impact on the assessment of educational programs and the transformation of management in primary schools. Additionally, the headmaster's innovative leadership style as a guiding construct has a significant impact on the SKPMg2 standard 1 (one) to accomplish the program outcome.

The findings from this study provide some meaningful contributions in practice. The model developed in this study can be a useful guide and source of feedback for implementers and related parties in planning, designing, implementing, and evaluating training and development programs for teachers in schools. This study also contributes meaningful implications to the education system, especially in the aspect of the transformational leadership style of the headmaster to make Classroom Assessments (PBD). In line with what is outlined in the Malaysian Education Development Plan (PPPM) 2013-2025, the government intends for the Head Teacher's transformational leadership style to be able to conduct PBD in every school.

### References

- Acton KS (2021) School leaders as change agents: Do principals have the tools they need? Management in Education 35 (1):43-51. https://doi.org/10.1177/0892020620927415.
- Adams D & Velarde JM (2021) Leadership in a culturally diverse environment: Perspectives from international school leaders in Malaysia. Asia Pacific Journal of Education 41 (2):323-335. https://doi.org/10.1080/02188791.2020.1732295.
- Andrin G, Kilag OK, Groenewald E, Unabia R, Cordova Jr N, & Nacario KM (2023) Beyond management: Cultivating leadership in educational institutions. Excellencia: International Multi-disciplinary Journal of Education (2994-9521) 1 (6):365-375.
- Bass BM (1990) From transactional to transformational leadership: Learning to share the vision. Organizational Dynamics 18: 19-32. https://doi.org/10.1016/0090-2616(90)90061-S.
- Bhattacharyya E (2019) Leadership competencies and leadership style in aspiring cluster schools of excellence. Pertanika Journal of Social Sciences and Humatinies 27 (2):1111-1129 http://www.pertanika.upm.edu.my/pjtas/browse/regular-issue?article=JSSH-2451-2017.
- Burns JM (1978) Leadership. New York: Harper & Row.

- Din R (2021) The practice level amongst middle leaders teacher of school to increas quality of theacer and increase achievements of students refer to Skpmg2 Std 3, in facing industrial revolutional education 4.0. Facing Industrial Revolutional Education 4 (2516-2314). https://easychair.org/publications/preprint/X5Sr
- Filgona J, Sakiyo J, Gwany DM, & Okoronka AU (2020) Motivation in learning. Asian Journal of Education and social studies 10 (4):16-37. https://doi.org/10.9734/ajess/2020/v10i430273.
- Forfang H & Paulsen JM (2024) Linking school leaders' core practices to organizational school climate and student achievements in Norwegian high-performing and low-performing rural schools. Educational Management Administration & Leadership 52 (1):99-115. https://doi.org/10.1177/17411432211064424.
- Fraenkel JR & Wallen NE (2000) How to Design and Evaluate Research in Education. New York: McGraw.
- Hui LS & Singh GSB (2020) The influence of instructional leadership on learning organisation at high performing primary schools in Malaysia. Asian Journal of University Education 16 (2):69-76. https://doi.org/10.24191/ajue.v16i2.10298.
- Kenayathulla HB, Ghani MFA, & Radzi NM (2024) Enhancing quality appointment, preparation and support system for Malaysian principals. Education Sciences 14 (6):659.
- Koh K (2014) Authentic assessment, teacher judgment and moderation in a context of high accountability. In: Designing Assessment for Quality Learning. Dordrecht: Springer Netherlands. 249-264.
- KPM (2016) Malaysian Ministry of Education (Pelan pembangunan pendidikan Malaysia (PPPM) 2013-2025. https://www.pmo.gov.my/wp-content/uploads/2019/07/Pelan-Pembangunan-Pendidikan-2013\_2025.pdf.
- Kuhnert KW & Lewis P (1987) Transactional and transformational leadership: A constructive/developmental analysis. Academy of Management review 12 (4):648-657 https://doi.org/10.2307/258070.
- Ladkin D & Patrick CB (2022) Whiteness in leadership theorizing: A critical analysis of race in Bass' transformational leadership theory. Leadership 18 (2):205-223 https://doi.org/10. 1177/17427150211066442.
- Li L & Liu Y (2022) An integrated model of principal transformational leadership and teacher leadership that is related to teacher self-efficacy and student academic performance. Asia Pacific Journal of Education 42 (4):661-678. https://doi.org/10.1080/02188791.2020.1806036.
- Liew YF & Teoh HK (2022) STEM education in Malaysia: An organisational development approach? International Journal of Advanced Research in Future Ready Learning and Education 29 (1):1-19. https://doi.org/10.37934/frle.29.1.119.
- Litz D & Blaik-Hourani R (2020) Transformational leadership and change in education. In: Oxford Research Encyclopedia of Education. https://doi.org/10.1093/acrefore/9780190264093.013.631.
- Mansor AN, Abdullah R, & Jamaludin KA (2021) The influence of transformational leadership and teachers' trust in principals on teachers' working commitment. Humanities and Social Sciences Communications 8 (1):1-9. https://doi.org/10.1057/s41599-021-00985-6.
- McCarley TA, Peters ML, & Decman JM (2016) Transformational leadership related to school climate: A multi-level analysis. Educational Management Administration & Leadership 44 (2):322-342. https://eric.ed.gov/?id=EJ1092743.
- Murtiningsih M, Kristiawan M, & Lian B (2019) The correlation between supervision of headmaster and interpersonal communication with work ethos of the teacher. European Journal of Education Studies 6 (1):246-256. https://oapub.org/edu/index.php/ejes/article/view/2398/5036
- Ofojebe WN & Ezugoh C (2010) Teachers' motivation and its influence on quality assurance in the Nigerian educational system. African Research Review 4 (2). https://doi.org/10.4314/afrrev. v4i2.58352.
- O'Leary M (2020) Classroom observation: A guide to the effective observation of teaching and learning. Oxfordshire: Routledge. https://doi.org/10.4324/9781315630243.

- Rahman MAA, Akbar AJM, Rosemawati R, Abdullah R, Amat N, Adnin LSY, & Osman S (2022) Assessing Mandarin Lecturers' role-performance quality in Mara Education Institutions (IPMA). Institutions (IPMA) 12 (4):1372-1386. https://doi.org/10.24200/jonus.vol8iss1pp140-157.
- Redín DM, Meyer M, & Rego A (2023) Positive leadership action framework: Simply doing good and doing well. Frontiers in Psychology 13: 977750. https://doi.org/10.3389/fpsyg.2022.977750.
- Schumucker RE & Lomax R (2004) A Beginner's Guide to Structural Equation Modeling (2nd edition). Mahwah, New Jersey: Lawrence Erlbaun Associates Publishers. https://doi.org/10.4324/9781410610904.
- Selvaraja K, Basri R, Mat Rashid A, & Abdullah A (2021) Entrepreneurial leadership among headmasters in Malaysian primary schools. Jurnal Pendidikan Malaysia 46 (1):38-47. http://dx.doi.org/10.17576/JPEN-2021-46.01-04.
- Siek N (2022) Academic management strategies of secondary schools in Cambodia based on the concept of innovation leadership skills. https://doi.org/10.58837/CHULA.THE.2022.122.
- Tai MK & Abdull Kareem O (2020) Headteacher change leadership competency: A study in Malaysian primary schools. Professional Development in Education 46 (2):292-305. https://doi.org/10.10 80/19415257.2018.1561494.
- Thien LM & Lee HC (2023) The effects of school culture dimensions on teacher well-being across under-enrolled and high-enrolment schools. Social Sciences & Humanities Open 7 (1):100396. https://doi.org/10.1016/j.ssaho.2023.100396.
- Watterston J & Zhao Y (2024) Focused: Understanding, Negotiating, and Maximizing Your Influence as a School Leader. California: Corwin Press.
- Woods P & Jeffrey B (2019) Teachable moments: The art of teaching in primary schools. Oxfordshire: Routledge. https://doi.org/10.4324/9780429326967.
- Yaakob MFM, Othman MKH, Yusof MR, Nawi A, Ghani MFA, & Ismail A (2022) The development of educational policy acceptance model. Journal for Educators, Teachers and Trainers 13 (5):403-411. https://digibug.ugr.es/handle/10481/79887.
- Yang Q (2023) Transformational Leadership of the School Heads and Physical Education Teachers' Self-Efficacy from Selected Private and Public Universities. Journal of Education and Educational Research 6 (2):42-47. https://doi.org/10.54097/jeer.v6i2.14733.
- Zabidi ZM & Adams D (2022) Education transformation in Malaysia: Equity, funding, and strategic partnership. In: Education in Malaysia. Oxfordshire: Routledge. 234-247.

### **Author Biographies**

**Abdullah Ibrahim** is actively involved in research focusing on sustainable development, interfaith dialogue, and cultural preservation, earning recognition for his scholarly work in Scopus-indexed journals. As a dedicated educator, he inspires students to engage critically with global issues through the lens of Islamic values. Email: abdullahibrahim@unisza.edu.my.

Mohd Johari Jusoh working as Headmaster with extensive experience in educational leadership at Kementerian Pendidikan Malaysia, Terengganu-Malaysia. His expertise in school administration, curriculum adaptation, and fostering inclusive education. Email: tac 488 jojo@yahoo.com.

**Norazura Tahir** is a Ph.D scholar, and have extensive experience in the field of leadership and teaching in schools. She often holds sharing of best practices at the district and state levels. Email: zura3376@gmail.com.

**Shamsida Suriyam Binti Hamzah** is a Ph.D. scholar, and currently associated with multiple forums for the education and leadership activities based in Malaysia. Email: pkptembesu@gmail.com.

**Muhajir Tasilkhan** is a distinguished academic and educator serving in the Faculty of Education at Universitas Dr. Soetomo, Surabaya, Indonesia. With expertise in educational sciences and a commitment to advancing teaching methodologies, Muhajir has made significant contributions to the field of education. Email: muhajir98@unitomo.ac.id.