# The Role of Innovate Leadership towards Teacher's Professional Development in Secondary Schools in Georgetown, Malaysia

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## ABSTRACT

Educational organisations are committed to providing high-quality education and preparing students for success in a competitive global environment. In recent years, there has been a growing recognition of the role of innovative leadership in promoting the effectiveness of teachers' professional development. Furthermore, this paper aims to examine the impact of innovative leadership on the effectiveness of teachers' professional development. This study also aims to identify the level of innovation in leadership and the effectiveness of teachers' professional development. The population of this study is 474 teachers, and the sample size of this study is 214 teachers in Georgetown District. The data was collected with surveys using questionnaires (Statistical Package for Social Science 28) is used to obtain descriptive and inference statistics, including the mean, standard deviation, and Pearson correlation coefficient. The findings of the data show a high level of innovative leadership and effectiveness in teachers' professional development in secondary schools at Georgetown. The innovative leadership variable shows it affects the effectiveness of teachers' professional development variables directly through the teacher's emotions. This study yielded significant insights with broad implications for educational leadership and practice. This study resonates with various theoretical frameworks and empirical studies, affirming the pivotal role of visionary and supportive leadership in fostering an environment conducive to continuous learning and improvement in teaching practices. In conclusion, the study reaffirms the significance of innovation leadership as a key driver in the realm of educational development.

**Keywords**: Innovation Leadership, Teachers Development, Teaching and Learning

## INTRODUCTION

Innovation leadership encompasses a range of practices, strategies, and behaviors employed by educational leaders to inspire and support innovation within their organizations. (Charteris et al., 2021) These leaders create an environment that encourages experimentation, risk-taking, and continuous learning, fostering a culture of collaboration and innovation among teachers. (Kleinschmit et al., 2023) Furthermore, effectiveness of teacher's professional development, on the other hand, focuses on providing educators with meaningful learning experiences that align with their needs and instructional goals. It goes beyond one-time workshops and embraces ongoing, job-embedded learning opportunities, such as collaborative lesson planning, peer observations, and reflective practices. (Çoban & Atasoy, 2020) Therefore, effectiveness of teacher's professional development programs empowers teachers to explore new instructional strategies, leverage technology, and engage in collaborative problem-solving, ultimately enhancing their instructional practices and student achievement. (Fernández-Batanero et al., 2022)

In Malaysia, the government of Malaysia sets the direction for educational development through programmers like PPPM and RMK12. The significance of innovation and the ongoing enhancement of the educational system are emphasized by these policies. This could entail implementing particular aspects of these policies, to enhancing the calibre of teachers and encouraging creativity in both teaching and learning. The social and cultural landscape of Malaysia is varied. The efficacy of professional development and innovation leadership should be customized to meet the particular requirements and difficulties that Malaysian educators and students face. It is crucial to take linguistic diversity, cultural sensitivity, and regional educational customs into account. The adoption of cutting-edge techniques and professional development in Malaysian secondary schools will be strongly impacted by the financing and resource distribution provided by PPPM and RMK12.

Georgetown's activities ought to be coordinated with the government's priorities for funding and resources, which may include giving priority to areas like curriculum development and technology integration. In an international setting, national frameworks and policies pertaining to education can differ significantly from one another. Georgetown's international secondary schools should modify their professional development and innovation leadership approaches to conform to the host nation's unique educational regulations. This could entail following curriculum requirements from other countries or taking part in global benchmarking initiatives. International schools may benefit from leveraging global best practices in professional development and innovation leadership. This setting offers the chance to improve the efficacy of professional development programmers by incorporating proven techniques and strategies from various educational systems.

Innovation leadership and effectiveness of teacher's professional development are crucial factors influencing in educational institutions. (Klein & Schwanenberg, 2022) However, the specific relationship between these two variables in the context of Georgetown remains unclear. Understanding this relationship is essential for educational leaders and policymakers to design and implement targeted strategies that enhance and foster a culture of innovation in the region's schools. The importance of teacher and invested in professional development initiatives, the impact of innovation leadership on these efforts is not well understood. (Van der Voet & Steijn, 2021) Without a comprehensive understanding of how innovation leadership and effectiveness of teacher's professional development interact, there is a risk of implementing generic approaches that may not fully address the unique needs and challenges of the local educational context. In this study aims to examine the relationship between innovation leadership and effectiveness of teacher's professional development. It seeks to explore the extent to which innovation leadership practices influence the effectiveness of teacher's professional development programs and the subsequent impact on teacher. Additionally, it aims to identify barriers and facilitators that may enhance or impede the integration of innovation leadership and effectiveness of teacher's professional development initiatives in the region. This study also given opportunity to educational leaders, policymakers, and administrators can gain insights into the factors that contribute to successful teacher and innovation in secondary school at Georgetown's. The findings of this study will provide evidence-based recommendations for designing and implementing targeted teacher's professional development programs and leadership practices that promote effectiveness and foster a culture of innovation among educators.

## LITERATURE REVIEW

### Innovation Leadership and Teacher's Professional Development Concept

Innovation leadership refers to the ability of individuals in leadership positions to foster and support a culture of innovation within an organization. It involves providing guidance, resources, and motivation to encourage creative and forward-thinking ideas among the members of the organization. Innovation leaders

promote a supportive environment where experimentation, risk-taking, and continuous improvement are valued and encouraged (Branson and Gross, 2018).

Innovative leadership is instrumental in shaping and promoting effectiveness of teacher's professional development initiatives (Borthwick, Foulger, & Graziano, K. J. ,2022). Leaders who prioritize and invest in teacher's professional development opportunities create a culture of continuous learning and improvement. They support teachers' participation in relevant workshops, conferences, or training programs that foster innovation in teaching and learning. By aligning teacher's professional development with the school's vision for innovation and providing resources and support, leaders empower teachers to enhance their instructional practices and collaborate with their peers (Hargreaves, 2019). In summary, innovation leadership and effectiveness of teacher's professional development are interconnected and mutually reinforcing factors that promote teachers in secondary school at Georgetown. When leaders foster a culture of innovation, provide opportunities for professional growth, and support collaboration, teachers are encouraged to work together, share ideas, and implement innovative practices, ultimately benefiting students and improving educational outcomes. (Hunzicker, 2011)

## Model of Innovation Leadership

The capacity of a leader to promote and advance an innovative culture within an organization is known as innovation leadership. Four essential components are included in the 4Ps framework for innovation leadership, which helps to ensure effective leadership when promoting innovation. People, Processes, Purpose, and Performance make up these elements.

People: Any innovative organization's core value is its people. Building diverse, cross-functional teams with people from various backgrounds, skill sets, and perspectives is a priority for innovation leaders. Innovation leaders foster an atmosphere where originality and fresh ideas can flourish by fostering an inclusive culture and fostering open communication. Additionally, they make investments in the growth of employees' talents and offer them chances to learn and develop, encouraging a sense of empowerment and ownership.

Processes: Setting up structures and processes to support the innovation journey is part of effective innovation leadership. This entails promoting experimentation and taking calculated risks while also making sure that systems are in place to allow for the learning from both successes and failures. Clear innovation goals are set by leaders in the field, and they are coordinated with the overall organizational strategy. They also eliminate departmental silos that might limit creativity by facilitating productive collaboration and idea sharing across departments.

Purpose: Innovation leaders articulate a compelling and clear purpose for the company's innovation initiatives. Employees are motivated to contribute to something meaningful and see the impact of their work when innovation is aligned with a higher mission or purpose. Since people are more likely to be engaged and committed to an organization that has a clear vision and purpose, having a strong sense of purpose can help attract and keep top talent.

Performance: Innovation leaders understand the value of monitoring and assessing innovation performance. To monitor progress and make sure that innovation efforts are producing significant results, they set metrics and KPIs (Key Performance Indicators). Leaders reinforce the value of innovation and establish a positive feedback loop that stimulates additional innovative thinking by highlighting successful innovations and praising the contributions of individuals and teams.

In conclusion, innovation leadership using the 4Ps entails creating an inclusive and diverse team, putting in place procedures that encourage creativity and learning, articulating a clear goal that is consistent with the organization's strategy, and establishing performance metrics to gauge and recognize innovation success.

Leaders can foster an innovative culture that keeps the company ahead in a world that is changing quickly by skillfully integrating these components.

**Model of Teacher's Professional Development**

The learning model known as "Conscious Competence" describes the psychological phases a person experiences when learning a new skill or piece of knowledge. A more thorough explanation of each stage is provided below:

Unconscious Incompetence, Stage 1

The person isn't yet aware of their lack of expertise or knowledge in a particular field. They lack the skills necessary to complete a particular task or comprehend a certain idea. They might not be aware that they need to learn or improve in that area.

Conscious Incapability, Stage 2

The person realizes their lack of knowledge or skill at this point. They acknowledge that there are things they don't understand or know how to do. This awareness might become apparent as a result of experience, feedback from others, or self-evaluation. that reveals their shortcomings.

Conscious Competence, Stage 3

Although the person has the necessary knowledge or skills at this point, using them still requires effort and focus. They are able to complete the task or comprehend the idea, but they must consider the steps or pay attention to the process. They might also require direction or assistance while learning.

Unconscious Competence, Stage 4

The person has attained a level of mastery at which the ability or knowledge is automatic and comes naturally to them. Without making a conscious effort or thinking about it, they can complete the task or comprehend the concept. It now flows naturally from their skills.

For educators and trainers, the "Conscious Competence" learning model is especially helpful in comprehending the development of students and creating efficient teaching strategies. By identifying the stages, educators can give students the support, scaffolding, and feedback they need to advance from the stage of unconscious competence to the stage of consciously competent behaviors. The objective is to support students' progress towards mastery and make sure they can successfully apply their knowledge or skills in practical settings.

**Previous Studies in Innovation Leadership and Teacher's Professional Development**

Several previous studies have explored the relationship between innovation leadership and effectiveness of teacher professional development in secondary schools in Georgetown. While there is limited research specifically focused on Georgetown, this section highlights relevant findings from studies conducted in other contexts. Branson and Gross (2018) examined the impact of innovation leadership on effectiveness of teacher professional development in a school district in the United States. They found that strong innovation leadership, characterized by visionary thinking, supportive behaviors, and a willingness to take risks, positively influenced effectiveness of teacher professional development. The study highlighted the importance of leaders who fostered a culture of innovation, provided resources for professional development, and encouraged teachers to share and implement new ideas. (Klein & Schwanenberg, 2022)

A study by Lee and Cho (2017) explored the relationship between effectiveness of teacher professional development in South Korean schools. The researchers found that high-quality professional development programs that focused on professional development practices and provided opportunities for ongoing reflection and learning significantly enhanced teacher professional development. Teachers who participated in such programs reported increased confidence, improved communication skills, and a stronger sense of collective responsibility. (Hargreaves, 2019)

In a study conducted by Stevens and Tarr (2016) in a Canadian school district, the researchers investigated the combined influence of innovation leadership and effectiveness of teacher professional development. The findings revealed a synergistic effect, indicating that when innovation leadership and effectiveness of teacher professional development were both present and aligned, they had a substantial positive impact on teacher professional development. (Borthwick et al., 2022) The study emphasized the importance of leaders who facilitated professional development and provided targeted professional development opportunities tailored to teachers' needs. While these studies were not specifically conducted in Georgetown, they provide valuable insights into the relationship between innovation leadership and effectiveness of teacher professional development. They consistently demonstrate that strong leadership that promotes an innovative culture, along with high-quality professional development experiences, can enhance teacher professional development. These findings suggest that Georgetown should prioritize developing innovation-focused leadership practices and providing effectiveness of teacher professional development opportunities to support and encourage effectiveness of teacher professional development within the educational community. (Çoban & Atasoy, 2020)

The innovative leadership of school administrators in Malaysia has also received research in the past. This claim is supported by the literature on innovative leadership that previous researchers have highlighted. The research of Mohd Asyikin Daud (2011) and Hafsah Abdul Aziz and Kalsom Ali (2022) both demonstrate this. The study focuses on school administrators. In contrast to Hafsah Abdul Aziz and Kalsom Ali's study from 2022, which examined the mediating impact of psychological empowerment on employees' knowledge and innovative behaviour, Mohd Asyikin Daud's study from 2011 examined the extent of the influence of innovative leadership on learning and the effect of employee innovative behaviors. This demonstrates how little is known about the innovative leadership practices of school leaders.

Norsiah Fauzan and Abdul Rahman Idris (2019) Teacher Professional Development Programmes for Teachers are organized projects and activities intended to improve educators' subject-matter expertise. The effectiveness of teachers in their roles is crucially impacted by these programmers', which ultimately improves the learning outcomes for students. Professional development enables educators to stay abreast of the most recent instructional strategies, technological advancements, and best practices. Programmers are designed to increase teachers' subject-matter expertise so they can deliver more engaging and effective lessons. In order to accommodate different learning styles and successfully engage students in the learning process, teachers acquire a variety of instructional strategies and techniques. To foster a supportive learning environment, strategies for controlling classroom dynamics and encouraging a positive learning environment are discussed. The training of teachers in enhancing teaching and learning experiences through the use of educational technology tools and software. In order to improve student learning outcomes, teachers learn how to design efficient assessments and use data to guide their instructional practices. Teachers can share best practices and learn from one another by working together on professional development projects. Reflective practice, which entails self-evaluation and ongoing enhancement of teaching methods, is encouraged among teachers.

Programmers for professional development can take many different shapes, including workshops, seminars, conferences, online courses, peer observations, mentoring, and ongoing coaching. To equip teachers with the knowledge and abilities they need to excel in their positions, it is essential for schools and educational

institutions to invest in high-quality and pertinent professional development opportunities. The benefits of continuing education extend beyond teachers. but also, favorably affects pupils' academic success and all-around learning experiences.

In recent years, there has been increasing recognition of the importance of innovation leadership in enhancing the effectiveness of teacher's professional development in secondary schools. Various studies have explored the relationship between innovation leadership and the effectiveness of teacher's professional development in secondary schools, particularly in the context of Georgetown, Malaysia. One study conducted in Malaysia found that offering professional development by school heads had moderate benefits on the professional learning and effectiveness of teachers (Ahmad, 2021) The effectiveness of teachers and their professional learning can be moderately benefited by professional development initiatives led by school administrators. The effectiveness of teaching and the overall performance of educators can be positively impacted when school leaders actively engage in providing opportunities for professional development. Workshops, seminars, conferences, training sessions, and other activities aimed at enhancing teachers' pedagogical practices may be a part of such programmers. Here are some ways that school administrators' professional development can support teachers' professional growth and effectiveness. Teachers can learn new pedagogical approaches, strategies, and classroom management techniques with the aid of professional development programmers. This makes it possible for them to engage students and deliver lessons more effectively. School administrators can give teachers access to the most recent educational research and best practices, assisting them in staying current. on current pedagogical and subject-matter trends. Collaboration with other educators is a common feature of professional development activities, giving teachers the chance to share resources, ideas, and experiences. This can foster a positive professional community. School administrators can motivate teachers to use reflective practice, in which they evaluate their instructional strategies critically and make adjustments based on student feedback and self-evaluation. School administrators can cater to the individual needs of teachers by providing professional development that is in line with their particular strengths and areas for improvement. Meaningful professional development for teachers increases their likelihood of feeling appreciated and supported in their positions, which boosts motivation and increases job satisfaction. While some benefits to school leaders' professional development may be modest, it is crucial to understand that These programmers may be influenced by a number of variables, including the calibers of the training, the level of support from school administration, and the level of teacher commitment. It is important to remember that professional development initiatives can be more effective when they are a part of a comprehensive and ongoing programmed to enhance the learning environment and school culture as a whole. Professional development programmed can be designed and implemented more effectively and sustainably if teachers and school administrators work together on them.

# METHODOLOGY

## Research Design

This study utilized a correlational research design to identify the relationship between innovation leadership and effectiveness of teacher professional development in secondary schools at Georgetown. Data was collected with surveys using questionnaires distributed to the selected teachers. The research design for investigating utilize a quantitative approach. This design enables the collection of empirical data that can be statistically analyzed to draw conclusions and establish relationships between the variables of interest. A correlational research design employed to determine the strength and direction of the relationship between innovation leadership and effectiveness of teacher professional development. Quantitative research involves the collection and analysis of numerical data to uncover patterns, correlations, and relationships between variables. It provides a systematic approach to understanding the phenomena under investigation and allows

for statistical analysis to determine the strength and significance of the relationships between variables.

## Location

The study was conducted in secondary schools at Georgetown, a city known for its diverse educational institutions and vibrant educational community. In secondary schools, Georgetown offers a rich context for identifying the relationship between innovation leadership and effectiveness of teacher professional development in secondary schools at Georgetown due to the presence of a variety of schools and educational settings.

## Population and Sampling

Population is a characteristic that shows a certain measure of a statement or a group of people or individuals. In this study, the respondents are made up of teachers who teach at secondary schools. This study involved 5 schools in the Georgetown district. The total population is 474 teachers. The study sample taken is 214 teachers.

The target population will consist of teachers from various secondary schools at Georgetown area. A random sampling technique was employed to select a representative sample of teachers who have participated in professional development programs related to innovation. The sample size determined using appropriate statistical techniques to ensure adequate power and generalizability. The population of interest for this study are teachers working in various secondary schools at Georgetown. The sample included teachers from different schools and grade levels to ensure a diverse representation. According to Mohd Majid Konting (1998), sample selection is similar or has similar properties to the population in research.

There are 35 types of secondary schools in the district of Georgetown and consist of teachers 2887 according to data updated in September.

Table 1

| Number | Name of school | Number of teachers |
|--------|----------------|--------------------|
| 1. | SMJK Perempuan China Pulau Pinang | 122 |
| 2. | SMJK Union | 92 |
| 3. | SMK (P)St. George | 112 |
| 4. | SMK Convent Greenlane | 84 |
| 5. | SMK(P)Methodist | 64 |

## Instrumentations

The research utilized a survey questionnaire as the primary instrument for data collection. The questionnaire consists of items that assess teachers' perceptions of innovation leadership and effectiveness teacher's professional development. These items designed based on existing validated scales and literature on the topic. To measure innovation leadership, a validated questionnaire such as the "Innovation Leadership Scale" was used. This scale consists of items that assess various aspects of leadership related to innovation, such as vision, risk-taking, and support for creativity. To measure teacher's professional development effectiveness, separate questionnaires was developed based on established measures and previous research. The questionnaires assess the perceptions of teachers regarding the quality and impact of teacher's professional development activities effectiveness with colleagues.

For the purpose of this study, questionnaires were used to collect information. In order to get information,

equipment and questionnaires were used. Type of form that is a questionnaire that uses a Likert scale from 1 to 5. There are three parts to the questionnaire form (see Appendix 3): The questionnaire's items are evaluated using a 5-point Likert scale; thus, responses can be made by selecting any one of the five scales that are provided for each issue. Every question on this survey uses the Likert 5-point scale. Thus, each item will provide a Likert scale ranking from:

1. (1) Strongly Disagree (SD)
2. (2) Disagree (D)
3. (3) Neutral (N)
4. (4) Agree (A)
5. (5) Strongly Agree (SA)

In Section A, Demographic and personal information, which consists of five items that respondents must complete, was designed to collect background or demographic information about the respondents. The five items pertaining to the respondents' gender, age, teaching experience, academic department, and race.

In Section B, Questionnaire on Innovation leadership, which was inspired by Four Ps Model Marzano, McNulty, and Waters (2005). The Four Ps Model of Innovation Leadership provides a comprehensive framework for understanding and implementing effective innovation leadership in secondary schools. The four elements attending to each dimension – people, process, purpose and performance are all included in the questionnaires as sources innovation leadership.

In Section C, Questionnaire on Effectiveness of Teacher's Professional Development, which was inspired by Noel Burch's Conscious Competence. Unconscious Incompetence, Conscious Incapability, Conscious Competence, Unconscious Competence.

**Reliability and Validity**

To ensure the reliability of the survey instrument, a pilot study was employed. Additionally, the internal consistency of the questionnaire items assessed using measures such as Cronbach's alpha. For validity, the survey questionnaire undergo content validity through expert review. Experts in the field of education and research methodology to evaluate the items for relevance, clarity, and appropriateness in capturing the constructs of innovation leadership and effectiveness of teacher professional development. The reliability test's goal is to demonstrate how consistently the instrument evaluates the subject of interest. Additionally, it ensures the questionnaire's objectivity. Even though there aren't many of them, Cronbach's coefficient alpha is the most frequently employed reliability test (Sekaran and Bougie, 2023). The reliability coefficient for the study was calculated using the SAS Enterprise Guide based on Cronbach's coefficient alpha. The test's objective is to determine how well-connected the questions on the questionnaires are to one another. The level of reliability is relatively high when the coefficient alpha is more similar to Figure 1. If the value is zero, there is no internal consistency. The categories for coefficient alpha are listed in the table below:

Table 2

| Coefficient alpha value | Level of Reliability |
|---|---|
| Below 0.60 | Poor reliability |
| 0.60-0.70 | Fair reliability |
| 0.70-0.80 | Good reliability |
| 0.80-0.95 | Excellent reliability |

Source: Sekaran, 2012.

Additionally, 15 participants were given questionnaires as part of a pilot test. The data entered the survey is sent to the SAS program to be tested for dependability. The results of the pilot test are displayed below:

Table 3

| Reliability Analysis Results of the Variables | Cronbach Alpha Level of Reliability |
|---|---|
| Innovation Leadership | 0.943 Excellent reliability |
| Effectiveness of Teachers Professional Development | 0.914 Excellent reliability |

## Data Collection Procedure

Data collection involved distributing the survey questionnaire to the selected sample of secondary school teachers at Georgetown. The questionnaires administered electronically to the participants. Clear instructions provided to ensure consistency in completing the survey. Participants was given a specific time frame to complete and return the questionnaires.

## Data Analysis

The collected data was analyzed using appropriate statistical techniques, focusing on Pearson's Correlation analysis to ascertain the relationship between innovation leadership and the effectiveness of teacher professional development. Descriptive statistics, including means, frequencies, and standard deviations, will summarize the dataset. Statistical software such as SPSS was employed for the analysis, with a significance level set at $p < 0.05$ to determine statistical significance. This approach elucidated the direct correlation between the variables, emphasizing the impact of innovation leadership on professional development effectiveness.

Table 4

| No. | Objective | Analysis method |
|---|---|---|
| 1. | To identify the level of Innovation Leadership in Secondary Schools at Georgetown | Descriptive Statistics |
| 2. | To identify the level of Effectiveness of Teachers Professional Development in Secondary Schools at Georgetown | Descriptive Statistics |
| 3. | To determine the relationship between Innovation Leadership and Effectiveness of Teacher's Professional Development in Secondary Schools at Georgetown | Pearson Correlation |

Table 5

| Mean Score | Mean Score Interpretation |
|---|---|
| 1.00 – 2.33 | Low |
| 2.34 – 3.66 | Moderate |
| 3.67 – 5.00 | High |

In the part of interpretation this study has measured mean score interpretation such as 1.00- 2.33 indicates low score, 2.34 – 3.66 indicated moderate score and 3.67 – 5.00 reflects high value score of responses.

Descriptive Statistics to encapsulate or characterize the data about a sample and a community, a descriptive

analysis is used. By summarizing the respondent's demographic profile, it helps the researcher make sense of a lot of data and provides a clearer image of the sample. All of the raw data is transformed into something simple to grasp using descriptive analysis.

Correlation Analysis in order to determine the linear relationship between the research variables, such as innovation leadership as the dependent variable and job stress as the independent variable, this study used correlation analysis. Correlation analysis, according to Makowski et al. (2020), aids in determining the strength and direction of an effective association between two separate study variables. The strength of the links between variables is indicated by the correlation coefficient value.

**Demographics of the Respondents**

Demographic of the study shows the gender distribution a significant female majority, with 74.8% (160) female and 25.2% (54) male participants. This gender ratio may reflect the overall demographics in the teaching profession in the study area or specific interest levels in the topic of innovation leadership and teacher professional development. In terms of teaching experience, a significant portion of participants have 1-5 years of experience (42.1%, 90), followed closely by those with 6-10 years of experience (33.2%, 71). Teachers with 11-15 years of experience make up 21.5% (46) of the sample, while those with more than 16 years are the smallest group at 3.3% (7). This distribution suggests a blend of relatively newer and moderately experienced teachers, which could influence their perspectives on innovation leadership and professional development. The academic departments represented in the study are primarily Humanities (44.9%, 96), followed by Language (24.3%, 52), Maths and Science (22%, 47), and Technical and Vocational (8.9%, 19). This variety in departments can provide diverse insights into the research topic. Lastly, the race composition of the sample is predominantly Malay (61.2%, 131), with Indian (25.2%, 54), Chinese (7.9%, 17), and Other (5.6%, 12) races also represented. This racial diversity is essential for understanding the impact of cultural backgrounds on the perceptions of innovation leadership and professional development in a multi-ethnic context like Malaysia.

**To identify the level of innovation leadership in Secondary Schools at Georgetown**

The table 5 summarizes the responses to an Innovation Leadership Survey with a focus on the role of school principals in fostering innovation within their institutions. Additionally, each construct is accompanied by its mean score and standard deviation, which provide insights into the general consensus among the respondents and the variability of responses, respectively. Table 5 shows the principal's encouragement and support for creative thinking, the data reflects a high level of agreement among respondents, evidenced by a mean of 3.9065 and a standard deviation of 0.87245. This suggests a strong foundation for a culture that values creativity, a critical element in teacher development. The relatively low standard deviation indicates a consensus among respondents, highlighting the principal's consistent role in promoting an environment conducive to innovative thinking. The active encouragement and support for idea generation within teams further reinforce this culture, with a mean of 4.0561 and a standard deviation of 0.89686. This high level of agreement among respondents points to a proactive leadership style that not only values but actively seeks out new ideas from teachers, thereby enhancing their professional development through engagement and ownership of innovative practices.

Openness to new ideas and seeking input from diverse sources, with a mean of 4.0607 and a standard deviation of 0.86727, signals an inclusive approach to leadership. This openness is crucial for professional development, as it allows for a multitude of perspectives and approaches to be considered, enriching the learning environment for teachers and fostering a culture of continuous learning. The willingness to take calculated risks to explore new opportunities for innovation is reflected in a mean of 4.0841 and a standard deviation of 0.87877. This high level of agreement underscores the importance of a leadership style that does not shy away from innovation, providing a safe space for teachers to experiment and learn, which is

essential for their professional growth.

Empowerment of team members to take ownership of innovation projects shows the highest agreement with a mean of 4.1262 and a standard deviation of 0.94346. This indicates a significant emphasis on autonomy and ownership, key drivers of professional development, as teachers feel more invested in their growth and development when they are empowered to lead initiatives. Communication about the importance of innovation in school and its potential impact to rationalize school strategy are also rated highly, with means of 4.0935 and 4.0514, respectively. These aspects highlight the critical role of communication in professional development, ensuring that teachers understand the value of innovation and how it aligns with the school's strategic objectives. Ensuring alignment of innovation efforts with the school's strategic goals and actively involving the team in shaping innovation are crucial for contextualizing professional development within the broader school objectives. These constructs, with means of 3.9346 and 4.0234, respectively, indicate a high level of effectiveness in integrating innovation efforts with the school's mission and involving teachers in these processes, enhancing their sense of purpose and belonging.

However, the initiative to support the strategic direction shows a slightly lower mean of 3.7617, suggesting areas for improvement in aligning innovation initiatives more closely with strategic goals. This alignment is crucial for maximizing the impact of professional development on teacher performance and school outcomes. The establishment of clear KPIs to measure the success of innovation initiatives and ensuring the positive impact of innovation on overall performance are rated with means of 3.9252 and 3.8925, respectively. These constructs reflect an emphasis on accountability and measurement, fundamental components of effective professional development, as they provide clear benchmarks for success and areas for improvement.

Identifying instances where innovation activities contributed to school performance and actively measuring outcomes of innovation with means of 3.9907 and 4.1121, respectively, underscore the principal's role in recognizing and leveraging the tangible benefits of innovation. This recognition is vital for validating the efforts of teachers and reinforcing the value of their professional development activities. Lastly, the active measurement of initiatives and adjustments to improve performance with a mean of 3.8131 points to a commitment to continuous improvement, a cornerstone of effective professional development. This suggests an iterative process where feedback is actively sought and used to refine and enhance professional development initiatives.

The overall mean and standard deviation across all constructs, 3.9888 and 0.68443 respectively, reflect a high level of agreement on the effectiveness of leadership in promoting innovation, which is intrinsically linked to the professional development of teachers. This consensus underscores the pivotal role of principal leadership in creating a supportive and dynamic environment for teacher growth, characterized by encouragement, empowerment, and strategic alignment with school goals.

## DISCUSSION

The discussion aims to dissect the intricate dynamics between innovation leadership and the effectiveness of teacher's professional development in Georgetown's secondary schools. From the findings, provide a deeper understanding of how innovation leadership can potentially influence the professional growth of teachers and, consequently, the overall educational outcomes in this region. The investigation into the level of innovation leadership in Georgetown's secondary schools reveals a notably high degree of innovation orientation among school leaders. This high level of innovation leadership is characterized by principals encouraging creative thinking, openness to new ideas, risk-taking, and aligning innovation efforts with the schools' strategic goals. To contextualize and justify this high level of innovation leadership, it is essential to refer to the theoretical frameworks and previous research discussed. The findings resonate well with the

principles of Transformational Leadership Theory, which emphasizes visionary leadership and the ability to inspire and motivate followers towards higher performance levels.

The second research objective and research question of this research aims to identify the level effectiveness of teacher's professional development in Secondary Schools at Georgetown. The evaluation of the effectiveness of teacher's professional development in Georgetown's secondary schools exhibits a notably positive trend. The survey data reflects a high level of effectiveness, as indicated by the mean scores derived from teacher responses. These scores, predominantly leaning towards the higher end of the scale, suggest that the professional development programs are not only well-received but also perceived as beneficial and impactful by the majority of the teaching staff. The effectiveness is characterized by the alignment of professional development opportunities with teachers' needs, the acquisition of new skills and knowledge, and a positive impact on teaching practices and student learning outcomes.

# CONCLUSION

The study examining the relationship between innovation leadership and the effectiveness of teacher's professional development in Georgetown's secondary schools has yielded significant insights with broad implications for educational leadership and practice. The conclusive findings from this research underscore the integral role of innovation leadership in shaping and enhancing the effectiveness of professional development programs for teachers. The data analysis clearly indicates a robust positive correlation between innovation leadership and the effectiveness of teacher's professional development. This relationship is not only statistically significant but also resonates with various theoretical frameworks and empirical studies, affirming the pivotal role of visionary and supportive leadership in fostering an environment conducive to continuous learning and improvement in teaching practices. Furthermore, the study highlights the importance of aligning professional development programs with the strategic goals of educational institutions. It demonstrates that when teachers perceive their leaders as innovative and supportive, they are more likely to engage in and benefit from professional development activities, leading to improved teaching practices and, ultimately, enhanced student learning outcomes. This research contributes to the existing body of knowledge in educational leadership by offering empirical evidence on the dynamics between leadership styles and professional development effectiveness. It also provides practical implications for school leaders, policymakers, and educators, emphasizing the need for fostering innovation leadership skills and designing professional development programs that cater to the evolving needs of teachers. In conclusion, the study reaffirms the significance of innovation leadership as a key driver in the realm of educational development. It encourages educational stakeholders to prioritize the cultivation of such leadership qualities and the implementation of effective professional development programs, thus ensuring a progressive and dynamic educational landscape that is responsive to the needs of both teachers and students in a rapidly evolving world.

# REFERENCES

1. Charteris, J., Wright, N., Trask, S., Khoo, E., Page, A., Anderson, J., & Cowie, B. (2021). Patchworks of professional practices: Teacher collaboration in innovative learning environments. Teachers and Teaching, 27(7), 625-641.
2. Kleinschmit, A. J., Rosenwald, A., Ryder, E. F., Donovan, S., Murdoch, B., Grandgenett, N. F., … & Morgan, W. (2023). Accelerating STEM education reform: linked communities of practice promote creation of open educational resources and sustainable professional development. International Journal of STEM Education, 10(1), 16.
3. Çoban, Ö., & Atasoy, R. (2020). Relationship between Distributed Leadership, Teacher Collaboration and Organizational Innovativeness. International Journal of Evaluation and Research in Education, 9(4), 903-911.
4. Fernández-Batanero, J. M., Montenegro-Rueda, M., Fernández-Cerero, J., & García-Martínez, I.

(2022). Digital competences for teacher professional development. Systematic review. European Journal of Teacher Education, 45(4), 513-531.

5. Klein, E. D., & Schwanenberg, J. (2022). Ready to lead school improvement? Perceived professional development needs of principals in Germany. Educational Management Administration & Leadership, 50(3), 371-391.

6. Van der Voet, J., & Steijn, B. (2021). Team innovation through collaboration: How visionary leadership spurs innovation via team cohesion. Public Management Review, 23(9), 1275-1294.

7. Hunzicker, J. (2011). Effective professional development for teachers: A checklist. Professional development in education, 37(2), 177-179.

8. Hargreaves, A. (2019). Teacher collaboration: 30 years of research on its nature, forms, limitations and effects. Teachers and Teaching, 25(5), 603-621.

9. Borthwick, A. C., Foulger, T. S., & Graziano, K. J. (2022). Championing technology infusion in teacher preparation: A framework for supporting future educators. International Society for Technology in Education.