



## Taking Charge During Crisis: Problem-Solving and Decision-Making Strategies of School Leaders

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### ABSTRACT

The resolution of a crisis necessitates the implementation of efficient problem-solving strategies and the ability to make effective decisions. The occurrence of a crisis in schools presented various risks to the well-being of teachers, staff, and students, as well as the overall objectives, vision, and mission of the schools. Consequently, school leaders were confronted with significant challenges in addressing these issues while maintaining students' academic performance and minimising overall disruptions in education. This study aimed to examine the strategies and approaches employed by school leaders for effective problem-solving and decision-making in times of crisis. The objective was achieved by employing a qualitative research design by conducting semi-structured interviews with six school leaders from government secondary schools in three district education offices or *Pejabat Pendidikan Daerah* (PPDs) located in a northern state of peninsular Malaysia. From the thematic analysis, four problem-solving and decision-making strategies were identified namely recognising the needs of teachers and students; information-based and systematic decision-making; consultation and inclusiveness; and effective communication. The finding highlights varying yet effective strategies of problem-solving and decision-making from school leaders in dealing with the diverse needs and expectations of stakeholders during crises. It also underscores the necessity for school leaders to employ a variety of yet effective problem-solving and decision-making strategies during crises. This study provided a valuable lesson for educators, policymakers, and other related stakeholders on how to deal with crises in the future.



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## INTRODUCTION

In times of crisis, organisations, including schools, are vulnerable to the detrimental effects of a mismanagement (Coombs, 2007). This is because, schools may have limited personnel and access to public relations services. This could prove to be fatal when timing and initial response are critical (Burnett, 1998). Transitioning from routine problem-solving and decision-making to leading and managing schools during a crisis requires additional capabilities. Hence, in times of crisis, the ability to solve problems and make decisions has become one of the indicators of school leaders' efficacy (Amalia et al., 2020). School leaders must possess strong problem-solving and decision-making skills to effectively address complex and uncertain issues in times of crisis.

Two significant crises that have affected Malaysian schools serve as the context for this study. The crises are the COVID-19 pandemic and the floods. The research focuses on the period of the COVID-19 pandemic, specifically from January 25, 2020, to April 1, 2022 (Elengoe, 2020). In contrast, the duration of the flood crisis in Malaysia is not defined by a specific timeline. Instead, frequent flooding has become a common phenomenon in Malaysia (Mohamad Yusoff et al., 2018). The study explores the decision-making and problem-solving strategies of school leaders in times of crisis as they respond and lead their schools while navigating the dilemmas, challenges and conflicting demands in times of crisis.

### Problem-Solving and Decision-Making

Problem-solving can be described as the cognitive process of formulating and implementing strategies to generate solutions for various challenges. It is a cognitive process that involves the generation and utilisation of mental representations to address and resolve challenges that manifest across a wide range of contexts (Jonassen & Hung, 2008). According to Yurtseven et al. (2021), problem-solving as defined by D'Zurilla (1986), D'Zurilla and Goldfried (1971), and Tallman (1988) is a cognitive process of identifying and implementing a solution that effectively resolves an initial state of confusion or difficulty. Problem-solving is the process of detecting existing problems and subsequently resolving them by utilising the information that is readily accessible. In essence, it is an ongoing, deliberate endeavour with the objective of diminishing or rectifying the disparity between the present and preferred circumstances.

Decision-making on the other hand is an essential human endeavour and a necessary obligation for individuals in leadership positions. Decision-making necessitate the selection of a decision from a range of alternative options that are in competition with each other (Jonassen & Hung, 2008). The process of decision-making is frequently witnessed in scenarios wherein individuals are required to anticipate forthcoming events, choose from a range of possibilities, or make predictions regarding future occurrences. The significance of decision-making is evident in the observation that a decision is made even in situations where none of the available options or actions have been selected (Šporčić, 2012).

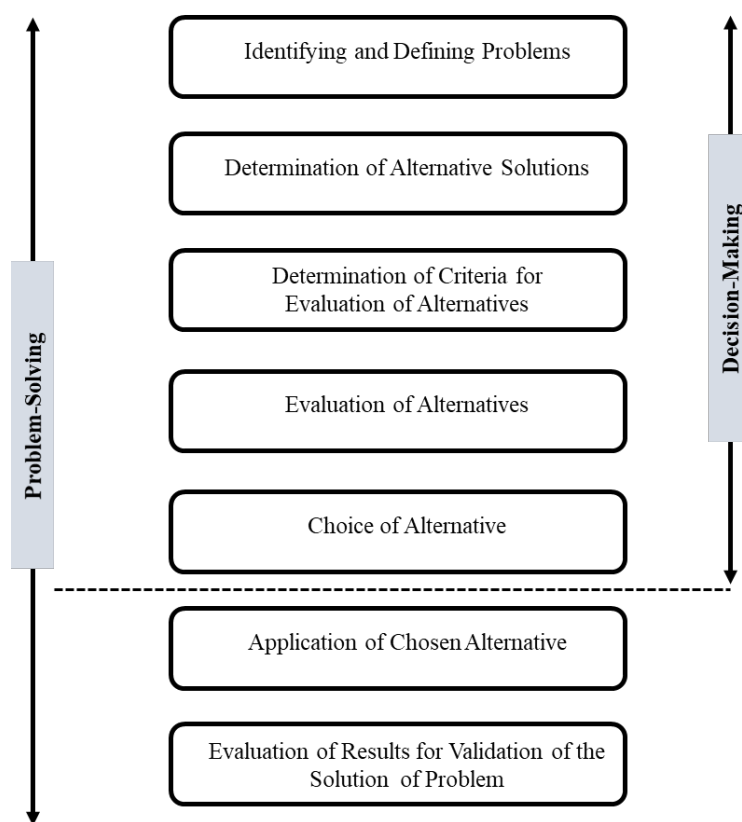
The process of problem-solving and decision-making is a multifaceted endeavour that requires the use of advanced cognitive abilities. Both processes necessitate the evaluation of one's environment, the utilisation of working memory or short-term memory, reliance on long-term memory, the implications of acquired knowledge, and the utilisation of heuristics (mental shortcut to avoid cognitive load) to achieve a particular conduct (Emily & John, 2019). Both problem-solving and decision-making necessitate the use of critical thinking skills. In times of crisis, the ability to solve problems and make decisions becomes essential for school leaders as it enables them to effectively guide their schools through challenging circumstances. These two entities possess a mutually beneficial relationship and have the capacity to effectively address a multitude of issues and obstacles (Birt, 2021).

School leaders who can employ effective problem-solving and decision-making strategies may effectively identify the core causes of problems, prioritise the most urgent and critical issues, and execute the best solutions in a timely and efficient manner. Furthermore, these will help them a creating a good and collaborative culture in their classrooms, where everyone is included and empowered in problem solving and decision-making. As a result, strong problem-

solving and decision-making abilities are required for school leaders to overcome challenges and seize opportunities during times of crisis.

In general, decision-making is an important phase in the problem-solving process (Delen, 2019). Each problem-solving and decision-making process produces a single final option; thus, these are the skills or abilities that leaders must possess, particularly in times of crisis. Therefore, developing proficient problem-solving and decision-making skills is crucial for individuals aspiring to become effective leaders. In summary, problem-solving and decision-making are crucial components for leaders, including school leaders, in times of crisis (Visone, 2018). A graphical representation of the correlation between problem-solving and decision-making is provided below (Šporčić, 2012).

Table 1. Šporčić (2012) Relationship Between Problem-Solving and Decision-Making



### RESEARCH OBJECTIVE

The objective of this study is to examine the strategies employed by school leaders for effective problem-solving and decision-making in times of crisis. The study was carried out in six schools, each with a different school leader, located in three state education offices, or PPDs, in Kedah, Malaysia, namely PPD Kota Setar, PPD Jitra, and PPD Kulim Bandar Bharu.

### LITERATURE REVIEW

#### Vroom-Yetton-Jago (2007) Normative and Descriptive Models of Leadership and Decision Making

The Vroom-Yetton-Jago model is a contingency theory that assists leaders in determining the most effective leadership style for a specific situation. The proposed model is developed using a decision tree framework, necessitating the leader to carefully assess the various dimensions of the specific problem or decision enables leaders to identify the appropriate extent and manner in which they should delegate decision-making authority to their subordinates. The model is constructed upon two fundamental aspects, namely the decision’s significance and the decision quality. The concept of decision significance refers to the organisational relevance of a decision, whereas decision quality refers to the appropriate amount of knowledge, skill, and dedication necessary for decision-making(Vroom & Jago, 2007).

The Vroom-Yetton-Jago model offers a collection of normative and descriptive frameworks to assist leaders in decision-making in various situations. The normative model offers a prescribed framework of principles and guidelines for the process of decision-making, whereas the descriptive model aims to represent and clarify the actual decision-making practices observed in real-world scenarios. The model includes five decision-making styles from the main styles of decision-making ranging from authoritarian to consultative to participative (group). According to the model, the quality of the decision, the opportunity for collaboration, and the time available are significant factors influencing decision-making (Vignesh, 2020; Vroom & Jago, 2007).

Vroom and Jago (2007) developed seven “Yes” or “No” questions as decision-making rules for specific decision situations, in order to identify the three styles in the decision-making process. The questions must be answered in a specific order to accurately describe and determine the appropriate leadership style for presenting and managing a specific decision. Vroom-Jago-Yetton (2007) Normative and Descriptive Models of Leadership and Decision Making decision tree process is illustrated Figure 1 below.

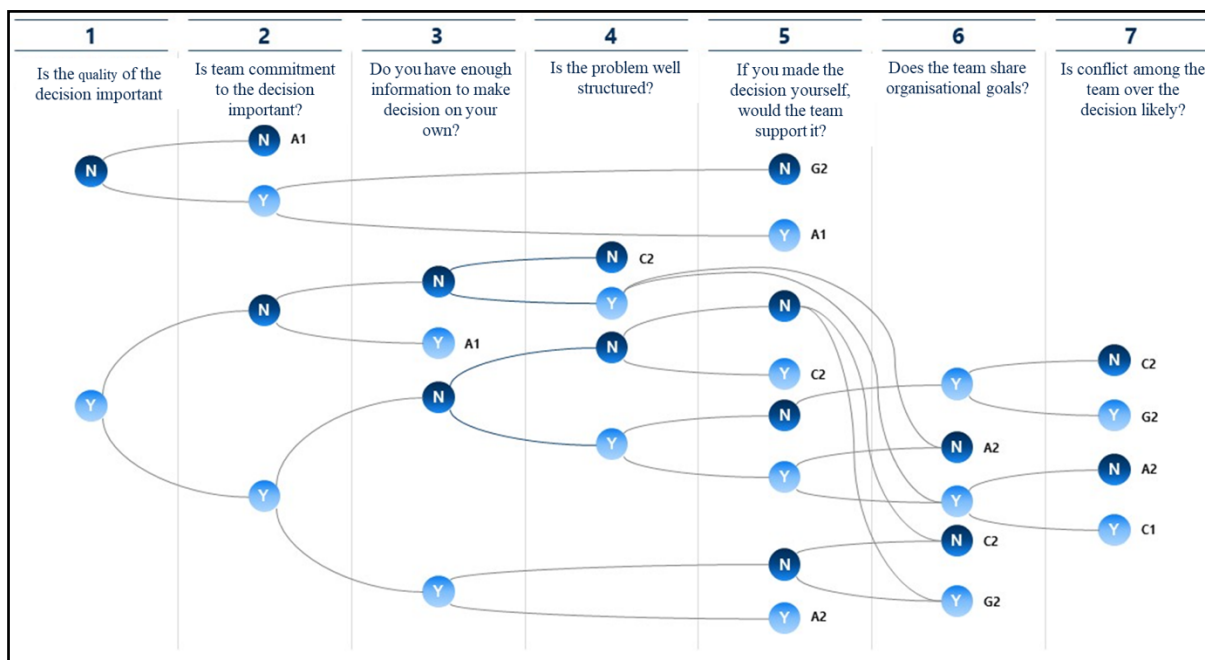


Figure 1. Vroom-Yetton-Jago (2007) Normative and Descriptive Models of Leadership and Decision Making decision tree adapted from Vroom and Jago (2007)

The model distinguishes three forms of leadership and five different processes presented in Table 2 below.

Table 2. Vroom-Yetton-Jago (2007) Normative and Descriptive Models of Leadership and Decision Making Types of Leadership and Decision-Making process adapted from (Vroom & Jago, 2007) Normative and Descriptive Models of Leadership and Decision Making

Decision-Making Styles	Descriptions
(A1) Autocratic I	Leaders make decisions. The opinion of team members or other parties is not consulted in this situation.
(A2) Autocratic II	Leaders make decisions independently, but unlike A1, they have more time and are likely to gather information from team members or other parties.
(C1) Consultative I	Leaders actively seek input from followers and take the initiative to gather their opinions on situations, problems, and decisions. The leader has the final say and may disregard the team's opinions and contributions if they do not align with his perspective.
(C2) Consultative II	Leaders get input from their followers. Leaders communicate problems and situations to followers, but ultimately, they must make decisions independently.
(G2) Group II	Decisions are made collectively by a group or team. Leaders inform followers about situations and problems, explore options, reach a consensus decision, and foster team commitment. The role of leaders is to facilitate and accept the group's decision without personal bias or vision.

#### Schein (2010) Six-Step Problem-Solving Model

Schein (2010) proposed a problem-solving model for achieving successful outcomes in an organisation. The Six-Step Problem-Solving Model is a structured approach to problem-solving. It includes the following steps:

- i. Define the Problem: This initial stage involves determining and precisely defining the problem at hand. This step is crucial as it establishes the basis for subsequent problem-solving actions.
- ii. Brainstorming: In this stage, the group engages in idea generation and explores potential solutions to the problem at hand. Promoting creativity and open-mindedness is crucial at this stage. The group should collect and analyse data to inform their decision-making process.
- iii. Develop Alternative Solutions: The group assesses the ideas generated in the brainstorming stage and chooses the most optimal solution. The group should evaluate the advantages and disadvantages of each option and employ innovative decision-making methods to identify the optimal course of action.
- iv. Solution: This step entails creating a strategic plan and determining the necessary resources for implementing the proposed solution.
- v. Implementation and Action Planning: This is the stage where the group formulates a plan to effectively implement and execute the solution process. The plan should encompass precise tasks, timelines, and assigned responsibilities.

- vi. **Evaluation and Assessment:** It involves evaluating the outcomes and results of the solution process. The group should evaluate the effectiveness of the solution and identify potential areas for improvement.

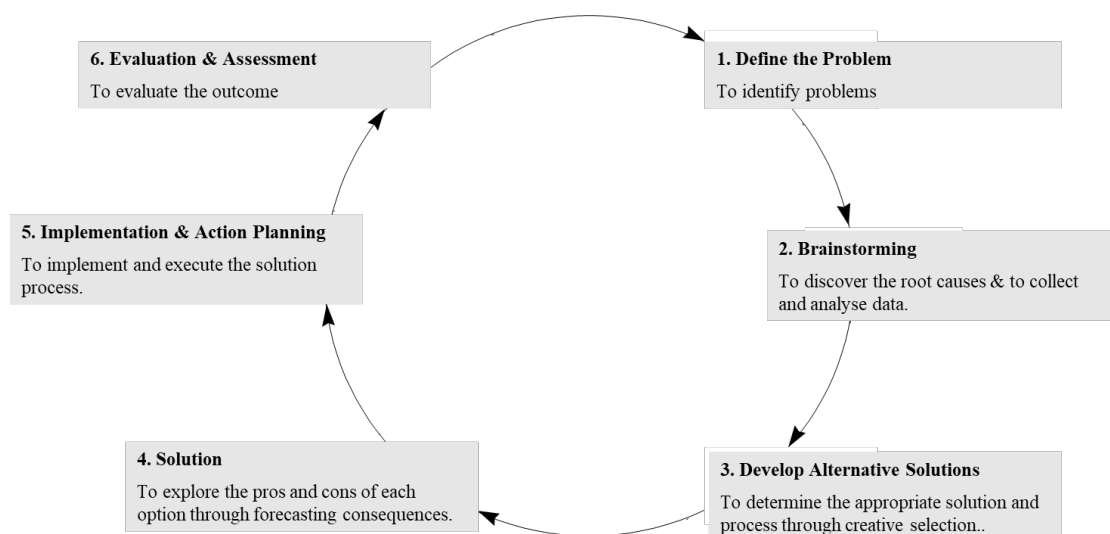


Figure 2. Schein's Six-Step Problem Solving Model adapted from Schein (2010)

School leaders must deal with different challenges in both normal and crisis times, The challenges require specific and unique strategies to address them. During regular times, school leaders may have to deal with challenges related to curriculum, student performance, teacher training, and resource allocation. However, in times of crisis, schools may face challenges such as disrupted learning, damage to infrastructure, psychological distress, and uncertainty. School leaders must be able to adapt to a new reality and confront challenges at both instructional and organisational levels which mostly cause by volatility, uncertainty, complexity, and ambiguity or VUCA that exist during crises (Chatzipanagiotou & Katsarou, 2023). These challenges require school leaders to possess the ability to effectively solve problems and make decisions during crises. As a result, different approaches, strategies and capabilities are required to effectively solve problems and make decisions during crises (Australian Institute for Teaching and School Leadership, 2020). Besides, it will test school leaders capabilities to lead during crises (Bush, 2021).

## METHODOLOGY

This study aims to examine the strategies and approaches employed by school leaders for effective problem-solving and decision-making in times of crisis. A qualitative research design was required to meet the study's objectives and it was derived from Creswell's (2014) research design. This study utilised a multi-site case study design to generate findings that are both contextually relevant and applicable across multiple locations (Audet & d'Amboise, 2001; Jenkins et al., 2018). Data was gathered from multiple sites to conduct a thorough analysis of school leaders' problem-solving and decision-making strategies across various contexts, as a single-site approach doesn't provide a comprehensive analysis of collected data (Yin, 2003).

### Participants

The study employed a combination of purposive sampling and expert sampling techniques. The study employed a non-probability method depending on researcher's own judgement to select participants based on specific criteria (Etikan et al., 2016). The participants for the study were selected using purposive sampling method based on three primary criteria. Firstly, they had to be

school leaders classified as outstanding principals of Grades DG52 or DG54. Secondly, they needed to possess significant experience in managing schools during crisis such as heavy flooding or the COVID-19 pandemic. Lastly, they must have served as school leaders for a minimum of three years. The number of participants was based on recommendations by Romney, Weller, and Batchelder (1986) who recommended a sample size of four to five participants for qualitative interviews as cited in Kumar et al. (2020). Besides, Creswell (2013) and Sim et al. (2018) recommended a sample size of four to five participants for case studies. Therefore, six school leaders from three different district education offices or PPDs in Kedah, Malaysia namely PPD Kota Setar, PPD Jitra, and PPD Kulim Bandar Bharu were selected.

#### Data Collection and Ethics

The study employed semi-structured interviews, which included both predetermined questions and the flexibility of unstructured interviews. The study's interview protocol was designed to optimise the effectiveness of the data collection process (Jacob & S. Paige Furgerson, 2012). To ensure effective data were captured during the interviews, an interview protocol was developed comprising a set of questions, prompts and a script to guide the interview process (Salmons, 2012). It was validated by four educational leadership specialists. All interviews were conducted in the Malay language. The questions and prompts are below.

Questions	Probes
1. Describe the recent crisis faced by the school?	<ul style="list-style-type: none"> <li>▪ What were the immediate challenges during the crisis?</li> <li>▪ How did you identify the challenges/issues/problems?</li> <li>▪ How did you prioritise your actions during the crisis?</li> <li>▪ What are the main factors that influence your decision-making?</li> </ul>
2. How did you find the solution between the necessity for quick decisions and informed decision-making during the crisis?	<ul style="list-style-type: none"> <li>▪ What are the factors for making urgent decision? Explain a situation.</li> <li>▪ How did you get necessary information?</li> <li>▪ How do you know they were effective?</li> </ul>
3. How did you communicate your problem-solving and decision-making acts?	<ul style="list-style-type: none"> <li>▪ What tools, mediums or platform did you use?</li> <li>▪ How did you address conflicting views?</li> <li>▪ How did you encourage openness?</li> <li>▪ How did you foster collaboration and shared responsibility among students, teachers, staff, parents as well as other relevant stakeholders?</li> </ul>

Prior to the interviews, participants were given an informed consent form to ensure they could make an informed decision about their participation in the research maintaining anonymity and confidentiality during the interviews, as well as their right to choose whether to disclose or withhold certain information. Participants were also given the option to withdraw from the interview if they felt compelled to do so (Ahmad, 2017).

#### Data Analysis

The interviews were transcribed using an online transcription service called "Transkriptor" available at <https://transkriptor.com/>. It is necessary to translate the data as the interviews were conducted in *Bahasa Melayu*. The interview data was then translated using Lingvanex Translator and Microsoft Translator in MS Word. The results were compared, edited, and merged to determine the optimal translation based on the interview setting.

The study employed Braun and Clarke's (2006) Six-Phase Thematic Analysis methodology to analyse the data. The study also employed coding techniques to identify and categorise words or phrases for the purpose of developing themes. The researcher utilised MS Word and MS Excel to establish code lists and maintain coding consistency.

The data was thoroughly analysed to identify key concepts, arguments, subjects, and recurring patterns that emerged during the investigation. The data was colour-coded to facilitate identification. The study employed a recursive methodology based on the frameworks proposed by Braun and Clarke (2006) and Nowell et al. (2017) which facilitated multiple modifications throughout the research processes. The data was then discussed using Bazeley's D-C-R methodology (2009) by incorporating various techniques such as comparison, pattern analysis, divergent views, literature review, and visual aids to facilitate deeper thinking (Bazeley, 2009)

## FINDINGS

### Findings

Based on the themes that emerged during the analysis, four strategies have been identified from the interviews that provide the answers on how the participants, in their capacity as school leaders, effectively solve problems and make decisions in times of crisis.

i. Recognising the needs of both teachers and students

The first strategy emphasised the importance of school leaders recognising the needs and concerns of students and teachers amidst the crisis. This strategy employed by school leaders throughout their problem-solving and decision-making. They must prioritise the needs of both teachers and students as this was one of the challenges identified. The participant also highlighted the importance of empathy and sympathy as crucial qualities for school leaders in offering emotional support and cultivating a sense of understanding and unity. Additionally, having a sense of empathy and sympathy towards both students and teachers helped school leaders in effectively solving the problems and making important decisions.

“As a leader must act with concern.

Empathy and sympathy are indispensable... having this kind of attitude...

I think and I hope as a leader I can take care of the emotions of those involved.”

**(Participant 1, Discourse Unit. 15-16)**

Participant 3, on the other hand, has recognised the issues she needs to address based on surveys. During the crisis, she conducted a series of surveys on the difficulties and challenges that arose as a result of the crisis. The strategy systematically and effectively improved her school's problem-solving and decision-making processes. She stated that identifying problems and difficulties, as well as assessing strengths and weaknesses, was critical before dealing with problems and challenges.

“Identifying problems

...and then we explore our strengths...and our weaknesses.”

**(Participant 3, Discourse Unit. 3-4)**

Subsequently, Participant 3 successfully employed efficient problem-solving and decision-making strategies to effectively tackle the identified issues through a unique initiative. Upon recognising the lack of necessary equipment for home-based learning among teachers and students during the crisis, she opted to provide resource mobilisation support. In addition to providing devices, she also prioritised equipping teachers and students with the necessary knowledge and skills for effective device usage.



“... first, our teachers were not fully equipped. Equipment... They did not have the devices. Device haah. ... and then we also found out through our study that our students had problems, so I came out with a fund called “Badlishah Care”

So, during that time we contributed handphones and aa laptop

So, with that we equipped... we equipped teachers with knowledge.

We equipped teachers and students with the devices, and we guide aa teachers who already had the knowledge and we helped them with devices. We also sponsored top-ups credit (internet data) for two months for students who can't afford.”

**(Participant 3, Discourse Unit. 3-4)**

The problem-solving and decision-making process should prioritise the needs of both students and teachers. This includes considering the well-being and academic progress of students, as well as the professional development, training, resources, and support for teachers. The introduction of eRPH by Participant 5 facilitated teaching preparation for teachers during the COVID-19's MCO. Despite MCO limitations, eRPH implementation can ensure teaching quality. The decision by school leaders enabled teachers to effectively address crisis-related challenges and issues.

“...I started with the eRPH... learning becomes easier.”

**(Participant 5, Discourse Unit. 13-14)**

ii. Information-based and systematic decision-making

The next theme reveals an additional strategy employed by school leaders. The theme emphasised the significance of using data, information, and to utilise ICT skills to effectively solve problems and make decisions in times of crisis. The emergence of the theme indicated that school leaders had systematically planned their problem-solving and decision-making processes.

“Because I did some research (a data collection) ...not really research... using Google Form only.”

**(Participant 3, Discourse Unit. 3-4)**

Participant 3 stated that her approach to problem-solving and decision-making is centred around problem identification and diagnosis. Through comprehensive analysis, she effectively identified and diagnosed the root causes of problems arising from a crisis. Her decision-making process was evidence-based, as she critically evaluated and analysed findings, statistics, and empirical data.

However, Participants 4 and 6 explicitly identified themselves as school leaders who prioritise data-driven decision-making. The acknowledged informed decisions were crucial. They had thoroughly considered various options, alternatives, and the potential impact of their decisions on the stakeholders during the problem-solving and decision-making process.

“I am based on data-driven”

**(Participant 4, Discourse Unit. 4-5)**

“Yes, we used data...”

...we used the information from MOH.”

**(Participant 6, Discourse Unit. 11-12)**

Participants 4 and 6 displayed another similarity. Both school leaders indicated that they were engaged in a systematic approach to solve problems and make decisions. Understanding the situation, identifying the issues, determining the root cause, planning, implementing targeted interventions, and anticipating the expected impact were some of the strategies identified. The strategic approach by the school leaders enabled them to achieve positive results and effective outcomes through problem-solving and decision-making.

“...we must know the status. Then we must identify the issues...  
Third, the cause. Fourth, must do an intervention...Fifth, then only we can get our expected impact...”

**(Participants 4, Discourse Unit. 10-11)**

“... first, I identified the problems... we did an analysis, analysis about the school. Yes, we used data...we used the information from MOH.... we came up with an action plan”

**(Participants 6, Discourse Unit. 10-11)**

iii. Consultation and inclusiveness

The theme highlights the importance of involving stakeholders in problem-solving and decision-making in times of crisis. Establishing appropriate committees, was an initial strategy towards solving problems and making decisions through consultative and inclusive approaches. Considering the various perspectives and acknowledging the knowledge and expertise of individuals can result in more well-informed, respected, and persistent problem-solving and decision-making processes.

“So, the school has formed COVID management committees at the school level while waiting for instructions from the Ministry of Education Malaysia to ensure that our school will survive the COVID.”

**(Participant 1, Discourse Unit. 3-4)**

On the other hand, Participant 3 organised sharing sessions for teachers to exchange experiences and skills. All teachers were asked to attend the 3 p.m. sharing session. The sharing session aimed to let teachers share their expertise and experience. Participant 3 used this approach to recognise teachers' ability and experience. The strategy had improved Participant 3 decision-making effectiveness in a collaborative and supportive environment in times of crisis.

“... I ask for a commitment from all the teachers every Sunday... at 3 pm we will sit together, and we share our experiences. How to teach.

**(Appendix xx, P3, DU. 1-2)**

Participants agreed that consultative and inclusive approaches were effective in solving problems and making decisions in times of crisis because they promote collective responsibility. Besides, they also emphasised transparency and accountability in leadership can achieved through a consultative and inclusive process. Participant 4 stressed the need for collective decision-making, especially when facing challenges and problems during COVID-19. He said relying only on his decisions might not work because of the crisis complexities.

“Making decision if you ask me. It's more of a collective (decision). If we're going to deal with issues related to COVID, the reason is because it is unnecessary our decision would be the right one.  
So, the practice is aa to make collective decisions”

**(Appendix xx, P4, DU. 4-5)**

Additionally, Participant 6 emphasised collaborative decision-making by involving the entire management team in discussions and meetings before making any decisions. She promoted collective decision-making and shared responsibility among the management team.

“... had meetings and discussions with everyone in the management team, including Senior Assistants and the warden (hostel).  
...I didn't make the decision alone by myself...”

**(Participant 6, Discourse Unit. 4-5)**

iv. Effective communication

The theme emphasised the significance of effective communication for facilitating problem-solving and decision-making in times of crisis. It was revealed that all participants utilised effective communication as a strategy for problem-solving and decision-making. During the crisis, stakeholders, including teachers and parents, were kept well-informed through the PIBG (parent teacher association), which disseminated relevant updates, information, and data. The significance of engaging in direct communication with parents in times of crisis was also emphasised.

“Likewise, I also aa as the Principal (school leader) take a step forward to inform the parents...”

**(Participant 1, Discourse Unit. 5-6)**

“In this situation, for me effective communication is very important to solve problems and make decisions.”

“So, I am involved in the school's management... Senior Assistants and others as well. Discuss and meet online. PIBG also helped to find ways to solve the problems faced by students and teachers during the crisis, especially about the implementation of PdPR.”

**(Participant 2, Discourse Unit. 5-6)**

Participant 5 emphasised proactive approach in engaging with parents and collaborating with the Parent-Teacher Association (PIBG) to address the issues and difficulties encountered during the crisis. Additionally, she engaged the broader community by incorporating local and religious leaders.

“Tried to contact parents

Contacting the surrounding communities is okay... “*Imam*” and the village head...we asked the PIBG to play their roles.”

**(Participant 5, Discourse Unit. 3-4)**

To establish trust and confidence among stakeholders, school leaders prioritised transparent and clear communication throughout the crisis. The school leaders found it beneficial to communicate effectively with stakeholders, providing them with a comprehensive understanding of the crisis, its challenges, potential solutions, and crucial updates regarding the school leaders' decisions.

“The COVID-19 situation demanded me as a school leader communicate information effectively in ensuring tasks can be executed well and smoothly.”

**(Participant 2, Discourse Unit. 5-6)**

“... I've created a Telegram group. The Telegram group provides two-way communication.”

**(Participant 4, Discourse Unit. 4-5)**

“The Sungai Kob Telegram group is the formal channel...all information was shared”

**(Participant 6, Discourse Unit. 13-14)**

Effective communication fosters collaboration among stakeholders and facilitated inclusive discussions, allowing individuals to share thoughts and ideas, collaborate on problem-solving, and make decisions by considering multiple perspectives. Additionally, the involvement of school leaders in collaborating with stakeholders facilitated the alignment of objectives and the coherent process of problem-solving and decision-making.

“Aa in every session aa there will be sharing session with the principal where I would give motivation and explain the school's aim, what I want from the students, and what I want from the teachers. So, the teachers know what I want.”

**(Participant 3, Discourse Unit. 3-4)**

## DISCUSSIONS

Possessing the ability to effectively solve problems and make decision is essential for school leaders to navigate complex situations arising from challenges and volatility, uncertainty, complexity, and ambiguity (VUCA) in times of crisis (Kerns, 2016). The participants highlight the significance of identifying the needs of teachers and students being empathy, care, and high awareness. The findings indicate that the participants place a high value on understanding the immediate needs of students, teachers, and staff in order to effectively solve problems and make decisions amidst the crisis. They must address the explicit and implicit needs of the recipient. It is a crucial characteristic that school leaders should possess (Noddings, 2012). The prioritisation of empathy, care, and awareness by the participants, in their capacity as school leaders, in order to solve problems and make decisions demonstrates their recognition of the importance of addressing human element in times of crisis.

In times of crisis, the participants also prioritise problem-solving, and decision-making based on data and information. It is important to note that as school leaders, the participants have significantly integrated digital leadership strategies in the planning and implementation process, particularly in problem-solving and decision-making (Hafiza Hamzah et al., 2021). In times of crisis, the participants depend on data and information to effectively address issues and make informed decisions. They take a proactive approach by continuously gathering, analysing, and interpreting data and information to inform their actions. They avoid problem-solving and decision-making processes that rely solely on speculation and personal intuition. School leaders bear a substantial responsibility as their decisions can have a broad impact on all individuals involved in the school community. They realise that they are responsible for their actions and should utilise accessible resources, such as data and knowledge from others, to make well-informed decisions (Half, 2022).

The participants then highlight the importance of active listening. The exposure to diverse perspectives and ideas facilitates their comprehension of varying viewpoints. Additionally, it facilitates effective communication among individuals involved in the educational setting, including students, teachers, and staff, regarding crises, solutions, and decision-making. Simultaneously, this enables them as school leaders to gain a comprehensive understanding of the challenges and the volatility, uncertainty, complexity, and ambiguity (VUCA) generated by the

crisis through various viewpoints, thus enhancing their problem-solving and decision-making effectiveness (Dirani et al., 2020; Haslam et al., 2021; Kaul et al., 2020).

The elements of empathy discussed earlier enables the participants to establish a supportive and inclusive environment that values and acknowledges teachers (UNESCO, 2020a, 2020b). This promotes trust and collaboration, resulting in improved student outcomes. As school leaders, they can make informed decisions and adapt strategies by understanding different perspectives, taking into account the diverse needs of their students (Don, 2020; Ferguson et al., 2021). School leaders can have a positive impact on students, particularly those in the B40 demographic in rural and urban areas, through empathetic responses (Don, 2020). Promoting inclusivity fosters a sense of belonging for students from diverse backgrounds, enhancing their feelings of support and value. Student engagement and motivation can improve overall academic performance (Dirani et al., 2020; Haslam et al., 2021; Kaul et al., 2020).

The participants also highlight the importance of establishing effective communication between the school community and stakeholders in times of crisis. Effective, clear, and transparent communication is crucial in times of crisis. School leaders play a crucial role in effectively disseminating information and updates to the school community and stakeholders during a crisis (Ferguson et al., 2021). Research in psychology and organisation has identified effective practises for crisis communication, such as transparency, honesty, and empathy towards those impacted by the crisis (Abrams, 2008). The participants achieve this through various methods, including participating in online meetings or utilising mobile applications such through Google Meet, Zoom, WhatsApp or Telegram.

The four strategies to solve problems and make decisions in times of crisis are significantly related to Vroom-Yetton-Jago (2007) Normative and Descriptive Models of Leadership and Decision-Making as well as Schein (2010) Six-Step Problem-Solving Model. To begin with, the process of problem-solving and decision-making involves identifying the needs of teachers and students, is similar to the first step in this model. On the other hand, according to the Vroom-Yetton-Jago model, determining the needs of teachers and students is part of the decision significance factor. This factor refers to the level of importance a decision holds for an organisation such as school (Schein, 2010; Vroom & Jago, 2007).

The consultative and inclusivity strategy is another component of the Vroom-Yetton-Jago model. It involves the leader analysing a specific problem or decision to determine how and to what extent to involve subordinates in the decision-making process. This step is connected to Schein's Six-Step Problem-Solving Model, which emphasizes seeking input from others and considering their perspectives when generating and evaluating potential solutions.

The analysis of data and information is an essential step in problem-solving and decision-making. This step is part of Schein's Six-Step Problem-Solving Model, where the collection of data and information enhances understanding of the problem. In the Vroom-Yetton-Jago model, this step relates to the decision quality factor that encompasses the necessary level of knowledge, expertise, and commitment for decision-making (Schein, 2010; Vroom & Jago, 2007).

Finally, effective communication is a critical component of both the Vroom-Yetton-Jago model and Schein's Six-Step Problem-Solving Model. It is vital in the Vroom-Yetton-Jago model to ensure alignment between leaders and subordinates in the decision-making process. Schein's Six-Step Problem-Solving Model emphasises the importance of effective communication in the problem-solving process. This ensures that all individuals involved are informed about the problem and the proposed solutions.

## CONCLUSION

Effective problem-solving and decision-making are essential for school leadership, particularly during challenging times such as crises. During crises, school leaders face multifaceted challenges that require their attention, such as safeguarding health and safety, upholding

educational standards, engaging with stakeholders, allocating resources effectively, and responding to evolving circumstances. Besides managing the challenges, school leaders must effectively manage the diverse needs and expectations of various stakeholders, such as students, parents, teachers, staff, government, and the community. The finding highlights varying yet effective strategies of problem-solving and decision-making from school leaders in dealing with challenges and diverse needs and expectations during crises. It also underscores the necessity for school leaders to employ a variety of yet effective problem-solving and decision-making strategies during crises.

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