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## THE MEDIATING EFFECT OF SCHOOL CULTURE IN THE RELATIONSHIP BETWEEN DEPUTY PRINCIPAL'S INSTRUCTIONAL LEADERSHIP AND SCHOOL EFFECTIVENESS IN GOVERNMENT SCHOOLS IN MALDIVES

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### ABSTRACT

Quality of education is a major concern in Maldives and the low performance of students has been a persistent problem in Maldivian schools. Instructional leadership is observed to have direct as well as indirect relationships with school effectiveness. However, despite being an integral part of school leadership, the instructional leadership role of deputy principal has been overlooked by educational research. Hence, this quantitative study aims to study the impact of deputy principal's instructional leadership and school culture on school effectiveness in the government schools of Male', the capital city of Maldives. Quantitative research approach was used for this study. A descriptive survey design was adopted using questionnaires to collect data. The sample consisted of 370 teachers working in the governments schools of the capital city, Male'. Data was analysed through Structural Equation Modeling technique using AMOS-23. Results indicated that deputy principal's instructional leadership has direct and positive relationships with school effectiveness and school culture. Additionally, school culture has a direct and positive relationship with school effectiveness. Finally, from the results of mediation analysis it was found that school culture partially mediates the relationship between deputy principal's instructional leadership practices and school effectiveness. In conclusion, the study validates that deputy principal's instructional leadership has direct and indirect effects on school effectiveness.

**Keywords:** Deputy Principal, Instructional Leadership, School Effectiveness, School Culture

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# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

## INTRODUCTION

The demands for accountability and improvement in student achievement has led to the increase in educational researchers searching for reasons and ways to enhance school effectiveness. Researchers in the area of educational leadership have attempted to identify the various links between school variables in order to improve outcomes. Empirical evidence show that the success of schooling depends on many factors including instructional leadership and school culture (Hallinger & Heck, 1998; Huong, 2020; Mace-Matluck, 1987).

Instructional leadership has been a consistent factor in school effectiveness research (Abonyi & Sofo, 2019; Si-Rajab, Madya & Musa, 2019). Leadership studies suggest that school leader's instructional leadership has significant effects on school effectiveness (Hallinger & Heck, 1998; Murphy et al., 1985; Setwong & Prasertcharoensuk, 2013). According to Liu, Bellibas, and Gumus (2020), instructional leadership refers to the actions and behaviours carried out by the school leader to improve the outcomes of schooling. Among these tasks, student achievement and quality of teaching and learning are top priorities of instructional leaders (Si-Rajab et al., 2019).

A tremendous amount of literature on instructional leadership have focused on the role of the principal but there has been very little on the role and practices of the deputy principal (Cohen & Schechter, 2019; Leaf & Odhiambo, 2017). However, deputy principal's leadership and professional conduct play a vital role in school effectiveness (Abrahamsen, 2017; Barnett et al., 2017; Cranston et al., 2004). According to Armstrong (2009) deputy principals maintain organizational stability and retain effective relations with all stakeholders of the school. Besides, it is almost impossible for school principals to manage on their own, thus they depend on other school leaders (Senol & Lesinger, 2018). Accordingly, principals rely on deputies to implement instructional leadership in their schools (Abrahamsen, 2017).

Educators are always on the lookout for new approaches and strategies to improve the schools and school systems. Mutohar and Trisnantari (2020) point out that stakeholders of education are concerned about the effectiveness of educational institutions which have led to continuous efforts to improve educational organizations. One of the main factors affecting student success is the effectiveness of the school (Akay & Aypay, 2016). Mortimore (1991) described an effective school as "one in which pupils progress further than might be expected from consideration of its intake" (p. 9). Thus an effective school improves students' outcomes.

Effective school research has identified unique characteristics and processes as powerful indicators of student success (Lezotte, 1991; Talebloo et al., 2017). These indicators, known as the correlates of effective schools, have been linked to student success regardless of their family backgrounds (Magulod, 2017).

The school culture forms the basic disposition of the school and it helps the various stakeholders make sense of themselves and their interactions within the school (Karadag & Oztekin-Bayir, 2018). Sufean (2014) proclaim that instructional leadership of school leader shapes the culture of the school. According to DuPont (2009) positive and collaborative school cultures are created by the instructional leadership of school leader (DuPont, 2009). In fact, through collaboration and collective leadership, instructional leaders contribute to a positive and participatory school culture (Zahed-Babelan et al., 2019). Thus it is necessary for school leaders to be aware of the critical role of instructional leadership and its importance in creating positive and collaborative cultures to ensure school effectiveness (Senol & Lesinger, 2018).

Literature on school effectiveness studies emphasize the school leader's role in the effectiveness of the school (Gaziel, 2007). Researchers have suggested the possible associations between instructional leadership and several variables including school culture and school effectiveness (Ali et al., 2016; Yasin et al., 2017). Bellibas and Liu (2018) assert that instructional leadership is crucial for building a positive environment which is an essential requirement for school effectiveness. However, most of these variables have often been studied in isolation (Liu et al., 2020). A few studies have found correlation among instructional leadership, school culture and school effectiveness (Ali, 2017), yet more evidence is required to support the association between these variables.

Moreover, a growing number of educational researches claim greater impact of instructional leadership through mediated models (Yasin et al., 2017; Zahed-Babelan et al., 2019). These work suggest that a variety of school level variables including school culture mediate the effects of instructional leadership on the outcomes of the teaching and learning processes in school (Bellibas et al., 2020; Liu et al., 2020). Hallinger and Heck (1998) claim that instructional leadership indirectly influences school outcomes through other variables including school culture (Hallinger & Heck, 1998). Although research on leadership have



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

advanced, the question whether the impacts of leadership on school outcomes are more from direct or indirect effects is still a much debated topic (Hallinger & Heck, 1998; Kythreotis et al., 2010; Yasin et al., 2017).

Studies across different countries and socio-economic contexts have identified instructional leadership of school leaders as a key determinant of school effectiveness. Even though the international knowledge base on instructional leadership has been established, these research findings are concentrated only in a limited western cultural context (Hallinger et al., 2017; Qian et al., 2017; Wei et al., 2018). There is limited evidence on instructional leadership in non-western and developing countries (Harris, Jones, Adams, & Cheah, 2018). This is similar to the case of Maldives. There has been very little discussion on the practice of instructional leadership in the Maldivian context.

While the body of research on instructional leadership is scarce in Maldives, the evidence on deputy principal's leadership practices is nonexistent. In Maldivian schools, the deputy principal holds a key position in the school leadership team, however, many a times their responsibilities do not involve instructional leadership practices. Instead deputy principals spend most of their time on administrative tasks and attending to student needs and discipline (Cohen & Schechter, 2019; Leaf & Odhiambo, 2017). Nevertheless, deputy principal's role as instructional leaders have been recommended for several decades (Barnett et al., 2017; Celiktan, 2001). Therefore, to transform the shortcomings of the educational system, there is an urgent need to ascertain efficient leadership including deputy principal's instructional leadership in Maldivian schools.

The quality of education has been a persistent challenge in Maldives (Ministry of Education, 2019). Maldives devote 5-7 per cent of its GDP to education, yet the outcomes have not always been very satisfactory (UNESCO, 2017). Furthermore, there is an exam oriented culture in the schools which emphasize on achieving outstanding results in international exams, making it a great challenge for school leaders to provide a holistic education (Ahmed, 2016). Apparently, there is a need to for school leaders to connect with teachers to create a collaborative culture in Maldivian schools (Ngang, 2011). The increased demands to improve the quality of education have put system leaders under extreme pressure to enhance school effectiveness. Consequently, it is crucial to explore the issues contributing to underachievement in Maldivian schools as well as to find ways to rectify the problem.

Therefore, the purpose of this research is to examine the mediating effect of school culture in the relationship between deputy principal's instructional leadership and school effectiveness in government schools of Male', the capital city of Maldives.

## ***Instructional Leadership***

Instructional leadership is associated with school leader's actions and behaviours directed towards the improvement of teaching and learning process in the school (Hallinger & Murphy, 1985; Hassan et al., 2018; Liu et al., 2020). Instructional leadership is the school leader's practices which are aimed at producing successful outcomes in the teaching and learning process; and an effective instructional leader has positive influence on students, teachers and parents (Ozdemir et al., 2020). Thus instructional leadership refers to the strategies and actions of principal and other school leaders to improve the teaching and learning within schools (Hallinger & Wang, 2015). Consequently, it is essential for educational institutions to be administered by visionary leaders such as instructional leaders who are capable of managing and persuading staff to fully engage themselves in dynamic educational contexts (Widtayakornbundit & Phinaitrup, 2020).

The school leader's role as an instructional leader formally emerged in the United States during the 1960s (Atkinson, 2013; Mace-Matluck, 1987). During that time in many other parts of the world, the role of school administrator consisted mainly of administration and management responsibilities (Harris et al., 2018). In addition, there was not much substantial efforts to conceptualize the construct of instructional leadership (Atkinson, 2013). With the emergence of the effective schools movement in the USA and UK, the volume of discourse on instructional leadership increased (Hallinger & Wang, 2015). Since the 1990s, instructional leadership has been accepted by education systems around the world and the term instructional leadership has become prevalent in leadership studies and continues to evolve (Nguyen et al., 2018). Consequently, it is unanimous among scholars that schools in the 21<sup>st</sup> century require school leaders to practise strong instructional leadership skills (Abonyi & Sofo, 2019). Thus based upon strong empirical evidence, instructional leadership has become one of the most prominent leadership models.

Instructional leadership is conceptualized as a multidimensional concept (Mkhize & Bhengu, 2015). Numerous researchers have focused on the behaviours displayed by school leaders to identify instructional leadership (Alig-Mielcalek; 2003; Hallinger & Murphy, 1985; Khan et al., 2020). Hallinger and Murphy (1985) defined instructional leadership on three dimensions of



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

leadership activity: defining the school mission, managing the instructional program and promoting the school learning climate. Ismail et al. (2018) claim that instructional leaders develop and share school goals with the staff, coordinate and supervise the curriculum and instruction, monitor student progress, acknowledge effective teaching and successful students, protect the instructional time, maintain visibility and support the professional development of teachers. Common components in explaining the phenomenon of instructional leadership include vision and mission, instructional management and positive environment (Powell, 2017). Therefore, these dimensions were considered for measuring instructional leadership in this study.

A growing number of research on school leadership suggest that the presence or absence of a third variable between principal's leadership can lead to different outcomes (Hallinger & Heck, 1998; Kythreotis et al., 2010). Building on Pitner's (1998) framework which identified a range of approaches that could be used to study administrator effects, Hallinger and Heck (1998) conceptualized the Direct-effects Models (Model A), Mediated-Effects Models (Model B) and Reciprocal-Effects Models (Model C) of school leadership. Mediated-effects framework postulates that leadership practices contribute to desired outcomes of schooling, however they achieve their effects through indirect paths involving other people, events, and organizational factors (Hallinger & Heck, 1998). This conceptualization has been taken up by many researchers to study the mediated-effect studies of instructional leadership (Yasin et al., 2017; Zahed-Babelan, 2019). According to Bellibas et al. (2020) this vein of research indicates that instructional leadership indirectly influences outcomes of teaching and learning processes in school. In line with this concept, the impact of school leaders' instructional leadership on school effectiveness is mediated through school culture (Ali, 2017).

Despite the extensive studies on instructional leadership, most of them have been on the principal's instructional leadership and very little attention has been given to instructional roles and responsibilities of the deputy principal (Cranston, Tromans, & Reugebrink, 2004; Qian, Walker, & Li, 2016; Leaf & Odhiambo, 2017). Nevertheless, the deputy principals contribute professionally as much as the principal to the school (Cranston et al., 2004). The days when deputy principals were just attendance monitors or only dealt with student management are gone; in fact, the role of deputy principal has evolved into one of crucial importance in student achievement (Brotschul, 2013). Thus, growth of deputies as instructional leaders is required for them to acquire the skills needed to fill in for future principal's posts.

Instructional leadership has gradually gained worldwide interest, however, most of the evidence have been derived from western settings (Hallinger et al., 2017; Qian et al., 2017). Empirical evidence from non-western contexts show that the knowledge base in instructional leadership in certain countries is still emerging and the literature on instructional leadership practices from the developing countries is very limited (Hallinger & Walker, 2017; Harris et al., 2017; Khan et al., 2020). Studies from non-western contexts reveal clear distinctions in functions and practices of instructional leadership (Bellibas et al., 2020; Hallinger et al., 2017). From the limited evidence on instructional leadership in Asian region, it is evident that the socio-cultural and institutional context play a significant role in shaping the school leader's instructional leadership role (Wei et al., 2018). For example, school leaders in Asian countries are found to give a lot of emphasis on building solidarity and creating positive and collaborative relationships with members of the school (Hallinger et al., 2017; Qian et al., 2017).

Instructional leadership has been identified as a vital element of effective schools, however, it has also been criticised for its viability as a leadership model (Hallinger, 2011). It has been denounced for being hierarchical in nature, and is observed as a top down and directive approach (Hassan et al., 2018; Hallinger, 2005). Another criticism of the model is that the principal is expected to be a curriculum expert and should focus all their attention on curriculum and instruction, thus is considered as an unrealistic obligation (Leithwood & Sun, 2018).

Nevertheless, global literature proves that instructional leadership is one of the most salient determinants in the improvement of school performance (Harris et al., 2018). Research on educational leadership, school improvement and school effectiveness empirically support the role of instructional leadership on outcomes of schooling; establishing instructional leadership as a significant element in school effectiveness (Ghavifekr et al., 2014; Harris et al., 2019).

## ***School Effectiveness***

Research on school effectiveness show that some schools are more successful than others, raising the question of what defines an effective school. However, reviews on school effectiveness indicate that it is a difficult concept to define (Al-Harthi & Al-Mahdy, 2017; Burusic et al., 2016; Frederick; 1987). It could be due to the fact that despite being a place for learning, a school is a complex organization having economic, political, cultural and social dimensions (Akay & Aypay, 2016). Nonetheless, scholars have proposed various meanings of an effective school. Sammons et al. (1995) claim that in an effective school there is



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

improvement in students' outcomes when compared with similar intakes in other schools whereas in an ineffective school, students do not show much improvement in comparison to their status at intake. Akay and Aypay (2016) define school effectiveness as the level of goal attainment and consider it to be a key factor in student achievement. Ali et al. (2017) state that school effectiveness is described to be connected to internal factors and external factors, and inputs, process, and outputs.

Empirical and theoretical studies around the globe have defined school effectiveness in terms of student achievement, however school effectiveness cannot be based only on academic outputs (Talebloo et al., 2017; Lezotte & Snyder, 2011). Akay and Aypay (2016) state that school effectiveness is a multifaceted term comprising qualities of multiple parties. Laila (2015) assert that an acceptable definition of school effectiveness should consider students' learning and teachers' actions. According to Day and Sammons (2013) measurable outcomes such as student achievement are key indicators of school effectiveness, nevertheless, social outcomes are also equally important.

Since its inception in the 1960s, the concept of school effectiveness has gone through several phases (Al-Harthi & Al-Mahdy, 2017). The earlier phases saw school effectiveness as effects of school on student outcomes, followed by justifications based on input and output models; to being verified on input/process/output models. (Reynolds et al., 2014). Then came the internationalization of the field which has led to the current phase whereby school effectiveness is viewed in a more dynamic perspective; and is associated with direct, indirect as well as reciprocal relationships among the school variables (Hallinger & Heck, 1998; Reynolds et al., 2014).

Ronald Edmond (1986) identified five characteristics of effective schools which included a safe and orderly atmosphere, a climate of high expectations, strong instructional leadership, frequent monitoring of pupil progress and the opportunity to learn. Based on these notions, Lezotte (1991) came up with 'Correlates of effective schools' which consisted of seven attributes: safe and orderly environment, climate of high expectations for success, instructional leadership, clear and focus mission, opportunity to learn and student time on task, frequent monitoring of student progress and home-school relations. The concepts of Edmonds (1986) and Lezotte (1991) have been adopted by many scholars in measuring the effectiveness of schools (Albert-Green, 2005; Baldwin et al., 1993; Herman, 2017; Johnson, Livingston, Schwartz, & Slate, 2000; Levine & Lezotte, 1991). These correlates of effective schools have been linked with student success. The unique characteristics enable students to learn the essential knowledge and skills to achieve high results despite their backgrounds (Magulod, 2017).

School education is a crucial process in modern society and school leaders are constantly faced with the challenge of making schools a potential place for every learner. Nevertheless, school leaders are considered as an influential variable in school effectiveness (Hou et al., 2019). There is consensus among researchers that instructional leadership prioritises teaching and learning to enhance school outcomes (Bhengu & Mthembu, 2014). Accordingly, the capabilities of school leaders need to be enhanced as their role is critical in creating effective schools.

## **School Culture**

Culture is an abstract concept, thus making sense of it can be complicated (Schein, 2004). Yiing et al. (2009) state that organizational culture can be understood from various aspects; based on levels, strength, as well as adaptiveness. Culture is the accumulation of cultural experiences which is evident from one's personality and character (Schein, 2004). Due to its complexity, culture is interpreted differently among researchers, yet it is one of the most important concepts in education (Parker, 2015). Subsequently, culture is a concept which keeps evolving; when individuals join, new groups are formed, eventually creating new cultures (Schein, 2004).

Every school has a culture. It is defined as the common values, beliefs, symbols and meanings shared by the members of the school (Karadag & Oztekin-Bayir, 2018). Over time, these site-specific beliefs are embraced by the members of the school, providing a unique personality to the school (Zahed-Babelan et al., 2019). School culture represents an organized structure of values and perceptions that impact the thoughts and behaviours of people (DeMarco, 2018). According to Senol and Lesinger (2018) the school culture is a phenomenon which is shaped by the members of a school, they attain it in various forms like habits, views and behaviours and it impacts every function of the school. Therefore, school culture is often used to describe the distinctive organizational environments which differentiates one school from another (Zahed-Babelan et al., 2019).

The culture of a school is very powerful as it can influence everything that goes around the school. Ucar and Ipek (2019) assert that a strong organizational culture is an essential factor of an effective school. A positive school culture affects every aspect of a school including students' enthusiasm and achievement, teachers' motivation, their commitment and job satisfaction



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

(Kythreotis et al., 2010). DuPont (2009) suggests that a positive school culture is formed when all individuals have a positive attitude, and have a sense of caring and respect for each other. Consequently, the culture of a school is considered to be a source of pride to those who belong to that specific school.

Leadership plays an important role in organizational culture. School leaders are responsible for maintaining strong positive and student focused cultures (Peterson & Deal, 1998). According to DuPont (2009), effective school leaders are capable of reading and shaping the culture of a school. Thus, to become effective organizations in dynamic and competitive environments, leaders need to seek a culture that fits with new demands. In this complex global world, it is necessary for leaders to consult and involve staff in making decisions (Zahed-Babelan et al., 2019). School leaders should be aware of the past, present and future dreams and realities of the school so that everyone can be brought on board to change the culture of the school (DuPont, 2009).

## ***Instructional Leadership, School effectiveness and School Culture***

There have been a considerable number of research on school leadership, school effectiveness and school culture, however they have been mostly studied as isolated research, and few have inquired into the possible linkages among these variables (Liu et al., 2020; Yasin et al., 2017). Educational theorists postulate school leadership is a critical factor in determining school effectiveness (Hallinger & Heck, 2010; Hallinger & Murphy, 1985). Another common thread is that school leader's contributions to school outcomes are mediated through organizational factors such as instructional practices and school culture (Bellibas et al., 2020; Hallinger & Heck, 1998; Liu et al., 2020).

The school leader creates structural and socio-cultural processes that contributes to the effectiveness of student learning. Instructional leaders have the ability to create positive and collaborative cultures where staff and students are motivated to attain their goals (Zahed-Babelan et al., 2019). According to Gaziel (2007) school leaders directly influence school teachers and school culture, indirectly affecting students' performance. Likewise, Yasin et al. (2017) declare that school culture intervenes the association between instructional leadership and student academic achievement. Moreover, Leithwood and Sun (2018) argue that it is challenging for instructional leaders to focus all their efforts directly on the improvement of curriculum and instruction, thus a potential route to achieving school outcomes is by creating a supportive school culture.

As school leaders, teachers and parents work together over a time period, a school culture is created and this culture impacts the performance of the students and teachers (Yasin et al., 2017). Pearson (2015) postulates that the school culture directly affects the teaching staff which indirectly affects the students. As instructional leaders, school leaders need to realize the critical role that school culture plays in developing an effective school. They should understand the impact of their leadership style on the school culture and how it encourages and motivates teachers and students to works towards improving their performance.

Although the country has initiated several reforms in the educational sector to improve the school outcomes, the quality of education remains a critical concern in Maldivians schools. In addition, there is only a handful of studies which have looked into school effectiveness factors such as school leadership and school culture in the Maldives (Didi, 2007). Thus drawing upon the theoretical and empirical evidence from the literature review, this study focuses on examining the association among the concepts: instructional leadership, school culture and school effectiveness.

## **METHODOLOGY**

### ***Research Design***

To address the research problem a quantitative approach was used in this study and the data was analysed using statistical procedures. Quantitative research can be employed to test objective theories by examining the relationship among the variables (Creswell, 2018). The research instrument was a questionnaire which consisted of three sections: Part A-Instructional leadership, Part B- School effectiveness and Part C- School culture. The stated approach was chosen for the purpose of generalization.



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

## **Population and Sampling**

Sampling is the process of selecting a sufficient number of elements from a population in such a way to be able to generalise to the population. The objective of sampling is to lessen the gap between the values from the sample and those prevailing in the study population. (Kumar, 2014). The population of this study comprised of 1509 teachers teaching in 12 government schools of Male', the capital city of Maldives. Government schools of Male' were selected because 38% of the country's population live in Male', and government schools represent approximately 97% of the total schools in Maldives. To ensure respondents from primary and secondary were a part of the sample, stratified random sampling was adopted. Based on sample size determination table by Krejcie and Morgan (1970) the minimum sample size suggested for a total number of 1509 is 306 respondents. Nevertheless, in order to avoid any issues with data analysis, sample size was increased for this study (Creswell, 2018).

## **Instrumentation**

Based on the research objectives and literature review, a survey questionnaire was used to collect data from the teachers in government schools of Male', the capital city of Maldives. The questionnaire consisted of three sections: Part A having 22 items for measuring Instructional leadership using the Principal Instructional Management Rating Scale, (PIMRS) teacher short form (Hallinger et al., 2013), Part B having 35 items to assess school culture using School Culture Survey (Gruenert & Valentine, 1998) and finally Part C having 22 items measuring school effectiveness using the correlates of effective schools (Herman, 2017; Lezotte & Snyder, 2011). Likert scale 5 was used as it has been supported as appropriate by a number of studies (Akram et al., 2017; Ghavifekr et al., 2014). The reliability of questionnaire is as follows:

Table 1  
*Reliability of Measuring Instrument*

Variables	Dimensions	Cronbach Alpha Values
IL	Defining School Mission (DSM)	.944
	Managing Instructional Programme (MIP)	.951
	Promoting Positive School Climate (PPSC)	.945
	Overall	.976
SC	Collaborative Leadership (CL)	.932
	Teacher Collaboration (TC)	.915
	Professional Development (PD)	.916
	Unity of Purpose (UP)	.961
	Collegial Support (CS)	.953
	Learning Partnership (LP)	.883
	Overall	.976
SE	Focused Mission and Clear Goals (FMCG)	.992
	Conducive Learning Environment (CLE)	.891
	Strong Instructional Leadership (SIL)	.923
	Overall	.957

## **Data collection Procedures**

Data was collected from 12 government schools of Male', the capital city of Maldives. Permission for conducting research was sought from the Ministry of Education, Maldives. The researcher with the help of school focal points assigned from each school, carried out the survey. Self-administered approach was used to collect the data. The data was collected within a time frame of 30 days.

## **Data Analysis**

Data analysis involves analysing and interpreting the data collected in the study. The data was analysed using Structural Equation Modeling (SEM) technique. SEM is a powerful, multivariate technique used to test and evaluate multivariate causal



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

relationships (Fan et al., 2016). SEM is a combination of techniques including factor analysis, regression and path analysis. SEM is based on variates in both the measurement and structural models, whereby the measurement model represents correlational relationships among the constructs and the structural model identifies nature and relationships among the constructs (Hair et al., 2014).

Table 2  
*Normality of Data*

Variable	skewness	kurtosis
Defining School Mission (DSM)	-0.868	0.461
Managing Instructional Programme (MIP)	-0.797	0.255
Promoting Positive School Climate (PPSC)	-0.582	-0.293
Collaborative Leadership (CL)	-0.719	0.913
Teacher Collaboration (TC)	-0.584	0.644
Professional Development (PD)	-0.471	0.536
Unity of Purpose (UP)	-0.438	-0.070
Collegial Support (CS)	-0.777	1.224
Learning Partnership (LP)	-0.633	0.442
Focused Mission and Clear Goals (FMCG)	-0.749	0.839
Conducive Learning Environment (CLE)	-0.761	0.477
Strong Instructional Leadership (SIL)	-0.699	0.68
Multivariate		74.179

Table 2 shows the assessment of data for normality. Assessing the data for normality is an essential part of multivariate analysis. Multivariate normality can be detected by examining the skewness and kurtosis. Normality test using SEM was conducted. The result indicated that the deviation of data from normality was not severe as the z-values of skewness and kurtosis were between  $\pm 1.96$  at 0.05 significance level (Hair et al., 2014).

### **Reliability and Validity**

In this study, the confirmatory factor analysis (CFA) was performed to assess validity and reliability of the constructs (Mohamad et al., 2019). CFA is the validating procedure in SEM and can assess the Unidimensionality, validity and reliability of latent constructs (Awang, 2015). Table 3 shows the results of the Composite Reliability and AVE analysis on all research variables.

Table 3  
*Composite Reliability and AVE analysis*

Variable	CR	AVE
Instructional Leadership	0.921	0.796
School Effectiveness	0.861	0.674
School Culture	0.926	0.677

The reliability of the measurement model was assessed using the criteria, Composite Reliability (CR)  $\geq 0.6$  and Average Variance Extracted (AVE)  $\geq 0.5$ . Results of the analysis indicate that the variables have fulfilled the criteria in composite reliability and AVE analysis.

The goodness-of-fit of the measurement models reflect how good the model fits the data at hand (Awang, 2015). Several fit indices can be used to assess model fit from the three stages of model fitness, namely, absolute fit, incremental fit and parsimonious fit (Hair et al., 2014). However, researchers can choose any fitness index as long as one index from each category





# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

is represented (Baistaman et al., 2020). In this study the goodness-of-fit indices used for estimating the measurement model include the normed chi-square test (CMIN/DF), the Comparative Fit Index (CFI) and the Root Mean Square of Error Approximation (RMSEA).

Table 4  
*The fitness indices of measurement model*

Category	Acceptable Value	Test Value
Absolute Fit	RAMSEA $\leq$ .08	0.078
Incremental Fit	CFI $\geq$ .90	0.970
Parsimonious Fit	Chisq/df $\leq$ 5	3.157

Table 4 show all the fitness indices have met the suggested threshold value of a good fit and therefore it can be assumed the data fits the model well (Awang, 2015; Hair et al., 2014).

## RESULTS

Out of a total of 500 questionnaires distributed, 379 questionnaires were returned. However, due to incomplete information, 9 questionnaires were eliminated from the analysis. When editing data, the researcher needs to ensure that the information returned by participants are checked and any illogical, inconsistent or illegal data and omissions should be dealt appropriately (Sekaran & Bougie, 2016). The data was carefully examined for any inconsistencies before and during data entry. Therefore, data was analysed based on 370 questionnaires completed by respondents.

### *Hypothesis Test Results*

Structural Equation Modeling (SEM) was performed to examine the proposed hypotheses on the relationship between Instructional Leadership (IL), School Culture (SC) and School Effectiveness (SE). The model under study involved both direct and indirect effects on the dependent variable thus the best multivariate technique considered for analysis was SEM. Prior to hypotheses testing, the model fit indices were examined.

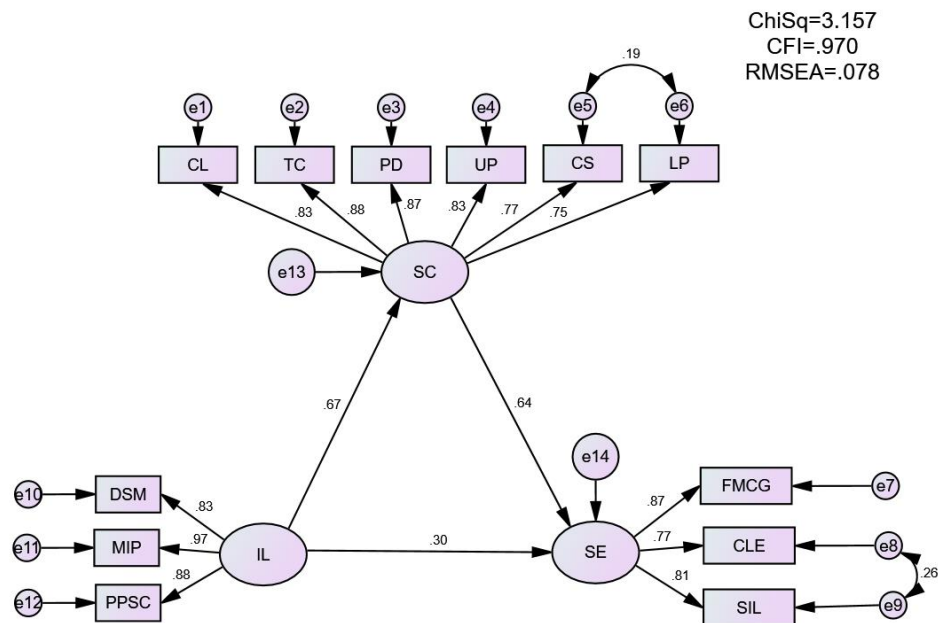


Figure 1. Fit Indices and Parameter Estimates of Hypothesized Model

As shown in Figure 1, all the model fit indices of the hypothesized model have met the required thresholds, therefore, the research model was considered for hypotheses testing.

Table 5  
*Hypothesis Testing (Direct Paths)*

			Estimate	S.E.	C.R.	P-value
School Effectiveness	<---	Instructional Leadership	0.236	0.042	5.688	0.001
School Culture	<---	Instructional Leadership	0.477	0.040	11.881	0.001
School Effectiveness	<---	School Culture	0.702	0.070	10.023	0.001

Results of hypothesis test of direct paths show that instructional leadership has significant influence on school effectiveness. The path coefficient between instructional leadership and school effectiveness is 0.301 and statistically significant. Similarly, the results of hypothesis test of relationship between instructional leadership and school culture shows a significant relationship. The path coefficient between instructional leadership and school culture is 0.670 and statistically significant. Finally, the direct path from school culture to school effectiveness also shows a positive relationship between the variables. The path coefficient between school culture and school effectiveness is 0.638 and statistically significant. Thus, results of hypothesis tests of direct paths show all three hypotheses can be well accepted.



Table 6  
*Hypothesis Testing for Mediation Effect*

	Indirect Effect	Direct effect
Bootstrapping Results	0.427	0.301
Bootstrapping P-Value	0.002	0.001
Result	Significant	Significant
Type of Mediation	Partial Mediation since the direct effect is also significant	

The study employed the Maximum Likelihood bootstrapping procedure to find the mediation. The bootstrapping procedure is a method used to assess the standardized indirect effect as well as the standardized direct effect (Awang, 2015). From the bootstrapping results of mediation test in Table 6 it can be concluded that school culture partially mediates the relationship between instructional leadership and school effectiveness.

## DISCUSSIONS

Based on the data analysis, deputy principal's instructional leadership practices have a positive correlation with school effectiveness in the Maldivian context. This finding is consistent with findings from previous research (Chiedozie & Victor, 2017; Edmond, 1986; Setwong & Prasertcharoensuk, 2013). The findings indicate that the elements of instructional leadership, namely: defining school mission, managing instructional programme and promoting positive school climate contribute to the outcomes of schooling (Ghavifekr et al., 2019; Si-Rajab et al., 2019). When the vision and mission of the school are shared with the members of the school it motivates them to attain the desired goals. School leaders pay significant attention to ensure that the school's instructional processes, programmes and activities are aligned to achieve the school mission, the educational policies and the initiatives (Nguyen & Yap, 2017). Furthermore, instructional leaders ensure that the task of managing the instruction program is practised efficiently as it focuses on the crucial functions of coordinating and monitoring of curriculum and teaching. Failure in managing the instructional program could negatively impact the performance of students. Moreover, the school leader's norms and attitude towards teachers influence learning in the school. Evidently, school leader's instructional leadership has direct effects on school effectiveness (Hassan, Ahmed, & Boon, 2018; Setwong & Prasertcharoensuk, 2013).

Leadership and school culture are regarded to be two sides of the same coin (Schein, 2004). The findings of this study demonstrated that Instructional leadership has a significant influence on school culture. The findings of this study supported previous literature which suggests that instructional leadership contributes to shaping a collaborative school culture (Ozdemir, 2011; Yasin et al., 2017). Likewise, Liu et al. (2020) assert that school leader's instructional leadership contributes to building a supportive school culture. It seems that school leaders can create a positive and collaborative school culture by assisting teacher collaboration, imparting shared leadership, and conveying a common goal (DuPont, 2009). In this regard, instructional leadership enhances the enthusiasm and morale of school faculty through a positive culture.

The findings also indicate that a positive school culture enhances school effectiveness. The findings correspond with the evidence presented by Demerath (2018), Duan, Du, and Yu (2018) and Enloe (2016) that significantly support the positive relationship between school culture and school effectiveness. Kuen (2009) observed school culture as a dynamic process which promotes school effectiveness. Similarly, Duan et al. (2018) found that school culture, which is made up of the relationships, ceremonies, and rituals within a school is correlated with school effectiveness. Yasin et al. (2017) discovered that schools work best in the presence of a positive school culture; and positive school cultures are linked with improvement of student achievement, teacher collaboration, and teacher self-determination. Everyday interactions, exchanges and processes contribute to school-level capacity building for improvement; thus people in schools should collaborate to solve the various problems they encounter (Demerath, 2018). Consequently, collaborative relationships among stakeholders is an important indicator of the effectiveness of a school

Additionally, school culture was found to play a mediating role in this study. School culture is an effective mediating component which can be utilised by school leaders to impact the school's outcomes (Radwan et al., 2020). The culture of the school directly effects the teaching staff which indirectly affects the students (Gaziel, 2007; Pearson, 2015). This means that by exercising instructional leadership through indirect paths such as school culture, school leaders can affect school effectiveness (Hallinger & Heck, 1998). School leaders can enhance their instructional effects by creating supporting cultures and organizational



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

routines which are powerful routes to improve school's performance (Leithwood & Sun, 2018). Instructional leaders create structural and socio-cultural processes that contributes to the effectiveness of school performance.

Evidently, when deputy principals practise instructional leadership, they develop positive and collaborative school cultures which in turn enhance the teaching and learning process of the school. The research findings confirm that instructional leadership has direct and indirect effects on school effectiveness (Ali, 2017; Hallinger & Heck, 1998).

## CONCLUSION AND IMPLICATIONS

Schools are constantly under scrutiny to improve the performance of students. Effective leadership is vital for the realization of school goals. The results of this study have revealed that deputy principal's instructional leadership has significant relationships with school culture and school effectiveness. This study adds evidence for the direct and indirect association between instructional leadership and school effectiveness, and posits that school culture mediates the relationship between these two variables. The quality of education is a major challenge faced by the Maldivian education system. Recent reform initiatives have shown little improvement on learning outcomes. Thus there is a pressing need to implement measures to raise the performance of students. Urgent action from policy makers and educational practitioners are required to address the systematic issues in education.

The evidence of school culture as a significant mediator highlights its importance for achieving school effectiveness. Since school culture affects every aspect of how a school functions it is imperative that school leaders practise instructional leadership. School leaders need to promote collaboration among teachers and provide opportunities for professional development which leads to a positive school culture. In addition, knowledge on the combined effects of instructional leadership and school culture on school effectiveness can guide policymakers in their reform efforts especially in regard to leadership training programs.

The study findings suggest that it is important to establish deputy principals' role as instructional leaders. Deputy principals can make a difference in meeting the challenges faced by schools through instructional leadership practices and by developing positive school cultures which improve the effectiveness of schools. In order to realise the current reform initiatives, system leaders need to reframe the deputies' role to include more on educational leadership and less on administration. In addition, deputy principals should be provided with training opportunities to improve instructional leadership skills as we all as be exposed to current trends in education so that they are equipped with the required knowledge and skills to facilitate teaching and learning. It is also important that principals provide unconditional support and mentoring to their deputies so that they can implement their role as instructional leaders.

The findings of the study will contribute to the insight of instructional leadership in the Asian context. Previous literature suggest that leadership practices vary across different socio-cultural contexts (Hallinger et al., 2017). Based on the data collected and interpreted, instructional leadership is practised in Maldivian schools. However, school leaders are weighed down with administrative responsibilities leaving little room for practising instructional leadership. Furthermore, pressure to improve performance have compelled school leaders to concentrate on attaining outstanding results in international exams rather than on providing a holistic education. Therefore, government initiatives need to acknowledge instructional leadership with regard to societal context and emphasise on building collaborative school cultures which is shown to enhance instructional effectiveness (Qian et al., 2017).

Although the results of the study have supported the hypotheses, it is important to highlight the limitations. Due to the spatial disparity between the capital city Male' and the outer islands, data was collected only from the schools in the capital city, Male', which limits the generalizability of the findings for the whole country. Future researches should consider extending research outside the capital city. The choice of school type is a delimitation of the study. Government schools were selected for this study since government schools represent approximately 97% of the total schools in Maldives. Future researches can replicate this study in private and international schools to add to the comparative perspective of private and public education.

In sum, instructional leadership of deputy principals make a positive impact on the members of the school and contributes to the formation of strong school cultures. The actions and behavior of the deputy principal is directly as well as indirectly connected to the various factors which influence the school effectiveness. Finally, understanding the combined effects of instructional leadership and school culture on school performance will help school leaders accomplish the desired outcomes of schooling.



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