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The Moderating Role of School Level in the Relationship between Deputy Principal's Instructional leadership and School Effectiveness in Public Schools in Maldives

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Abstract

The quality of education is a major concern in the Maldivian education system. Previous literature posits that effective leadership is critical for the realization of school goals. As such, instructional leadership is claimed to contribute to the teaching and learning process of the school. The purpose of this research is to determine the impact of deputy principal's instructional leadership on school effectiveness in public schools in Malé, the capital city of Maldives. It also aims to analyze the interaction effect of school level on the relationship between instructional leadership and school effectiveness. A quantitative research approach is selected for this study. The data was collected using a survey questionnaire. The sample consisted of 359 teachers working in the public schools of the capital city, Malé, who were selected through stratified random sampling. Structural equation modeling (SEM) was used to analyze the conceptual relationships. The findings revealed that deputy principal's instructional leadership has a direct and positive relationship with school effectiveness. The moderation test indicated that school level moderates the relationship between deputy principal's instructional leadership and school effectiveness, where the interaction effect is higher at secondary

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level compared to primary level. The results present many implications towards theory and practice of instructional leadership and school effectiveness.

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Introduction

Effective school leadership has been the interest of vast educational research for over several decades. Education is considered to be the most important prerequisite for future generations to be able to face the advancements and challenges of the 21st century. Therefore, researchers attempt to understand the association between educational leadership and school effectiveness. School leaders play a major role in school effectiveness (Hesbol, 2019; Sisman, 2016), nevertheless, the nature and degree of their influence has been a much-debated subject (Brauckmann & Pashiardis, 2011). There have been various criteria and characteristics associated with an effective school leader, and one of the requirements endorsed by many is that instructional leadership must be practiced by school leaders (Naicker, Chikoko, & Mthiyane, 2013; Si-Rajab, Madya, & Musa, 2019).

Most popular leadership paradigms include moderator variables such as nature and structure of organizational factors (Howell, Dorfman, & Kerr, 1986). Previous research works show that there are links between instructional leadership and school effectiveness (Hallinger & Murphy, 1985; Nguyen, Hallinger, & Chen,

2018), however, there is a lack of studies examining school level as a moderator variable that affects the relationship between instructional leadership and school effectiveness. According to Bendikson, Robinson, and Hattie (2012), even though school effectiveness increases when school's leadership focuses on instruction, it is unclear if the impact is the same for primary and secondary level.

The concept of instructional leadership has been mostly referred to the school principal's role in providing and improving education. On the contrary, leadership is also the responsibility of multiple individuals at all levels in a school including the deputy principal or the vice principal. (Duncan, 2017; Naickeret al., 2013). Nevertheless, studies focusing on the instructional leadership of deputy principals is scarce (Celikten, 2001; Leaf & Odhiambo, 2017). According to Cohen (2019), with the increase in academic pedagogical requirements in the school, the deputy principal is required to manage various tasks and responsibilities instead of being the typical disciplinarian and administrator as in the past. Moreover, the involvement in school leadership enhances deputy principal's motivation to manage the school (Arar, 2014). Deputy principals desire to be more involved in instructional leadership yet their role is not aligned with the roles and tasks of an instructional leader (Cranston, Tromans, & Reugebrink, 2004; Harvey, 1994). Instructional leadership deals with shaping the school's vision and goals, management of teaching, curriculum and programs, and findings ways to improve students' learning, however deputies do not get the opportunity to practice the roles of an instructional leader (Cohen, 2019).

Maldives is an island nation consisting of approximately 1190 tiny islands out of which only about 189 islands are inhabited.

The capital city Malé, is a small island covering an area of just 8.3 square kilometers and is densely populated. The country has almost achieved universal enrollment for both primary and secondary level education among both boys and girls, however the quality of education is a major concern in Maldives. According to the Maldives Education Sector Plan 2019-2023 (Ministry of Education & Ministry of Higher Education Republic of Maldives, 2019), one of the biggest policy challenges faced by the country is the quality of education at all levels. The quality of education is weak and needs to be improved urgently (Aturupane & Shojo, 2012). Under achievement of students in the International General Certificate of Secondary Education (IGCSE) examinations which is the secondary exit examinations for lower secondary education, has been a persistent problem in Maldivian schools (Yamada, Fujikawa, & Pangeni, 2015). This is a dire situation and needs to be addressed immediately.

In Maldivian schools, the vice principal or the assistant principal is known by the term 'deputy principal'. The deputy principal is considered the next in line to the principalship, and holds a key position in the school leadership team. Unfortunately, deputies are weighed down with administrative and managerial tasks such as attendance and discipline, leaving little room for instructional practices. The custodial role associated with assistant principals marginalize their instructional leadership role (Abrahamsen, 2017). Nonetheless, 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. Therefore, this research is intended to study the impact of deputy principal's instructional leadership on school effectiveness in public schools in Malé, the capital city of Maldives. The study also aims to identify whether school level is a moderating variable that

affects the relationship between instructional leadership and school effectiveness.

Literature Review

Instructional Leadership (IL)

Instructional leadership of the school leader is considered to be a key factor in school effectiveness (Adams, Mooi, & Muniandy, 2018; Alsaleh, 2018; Deniz & Erdener, 2020; Hallinger& Murphy, 1985). According to Celikten (2001) instructional leadership is a broad concept with various definitions describing the roles, actions and outcomes of instructional leadership. Bush and Glover (2003) defined instructional leadership as the leaders' roles in the teaching and learning process of the school and their focus on the teachers' behaviors with the students. Ozdemir, Sahin, and Ozturk (2020) state that instructional leadership is the school leader's practices aimed at achieving success in the teaching-learning process and an effective instructional leader drives all stakeholders towards achieving the school's goals. Thus, instructional leaders influence school outcomes by aligning the school's plans and actions with the mission of the school (Hallinger, 2005).

Instructional leadership was hardly acknowledged as a formal conceptualization of the school leaders' role up until a half-century ago (Bridges, 1967). However, from the 1990's the bureaucratic and management responsibilities which had been previously associated with school leader's duties have been replaced by the recognition of instructional leadership as one of the core roles of the school leader (Nguyen et al., 2018). Subsequently, the start of the effective school movement in the USA and UK led to the increase of discourse on instructional leadership (Hallinger & Wang, 2015). Instructional

leadership is now widely acknowledged to be a factor in school effectiveness and it is linked with positive impacts on the teaching and learning process of the school (Bellibas & Liu, 2018; Hallinger & Heck, 1996).

Several models of instructional leadership have been suggested by educational scholars but one of the more notable and applicable models is the instructional leadership model proposed by Hallinger and Murphy (1985). This model offers three dimensions of the instructional leadership: Defines a School Mission, Manages the Instructional Program, Develops a Positive School Learning Climate. Based on this framework, Hallinger (1983) developed the Principal Instructional Management Rating Scale (PIMRS), a tool for measuring the school leader's instructional leadership. According to this framework, school leaders lead by developing a school mission and aligning the teaching and learning activities with the specified objectives, they create a climate of high expectations, engage in monitoring and evaluation of the activities and stimulate innovation in instruction (Brauckmann & Pashiardis, 2010; Hallinger, 2005). The PIMRS has been used in over 500 empirical studies around the globe (Nguyen et al., 2018).

Instructional leadership has been recognized as an influential element for effective schools, however the leadership model has also had a fair amount of criticism. The viability of instructional leadership as a leadership model has been questioned (Hallinger, 2011). It is doubted as a practical model since it is unrealistic to expect the principals to focus all their attention on curriculum and instruction (Leithwood & Sun, 2018). The model concentrates too much on the expertise, power and authority of the principal, thereby underestimating the impact of other school leaders including the

deputy principal (Adams et al., 2018). It has also been criticized as a top down model and has been denounced for being hierarchical in nature (Hallinger, 2005; Hassan, Ahmed & Boon, 2018).

Although extensive studies have been done on instructional leadership, majority of these studies have focused on the role of school principal, and very little consideration has been given to the instructional leadership of the deputy principal (Cranston et al., 2004; Leaf & Odhiambo, 2017). Nevertheless, deputy principals are an imperative part of the school leadership team. In addition, with the progress that has been made in the knowledge and understanding of the concept of instructional leadership, the focus of attention has switched to other approaches of how leadership impacts students learning including the notion of instructional leadership as a distributed function involving other senior school leaders (Bush, 2015). To resolve the issue of top down and hierarchical approach of school leadership, school leaders should create conditions to support shared instructional leadership in schools (Abony & Sofo, 2019). Thus, in order to develop favorable working environment which facilitates more hands-on instructional leadership approaches with contemporary instructional leadership practices, the school principal needs the support of other school heads.

Deputy principals exercise instructional leadership in their daily work (Calabrese, 1991). However, deputies do not have proper well-defined roles and responsibilities. Thus, deputy principals would be more productive as leaders and serve the students and teachers better if their roles are redefined to include instructional leadership practices (Celikten, 2001; Cohen & Schechter, 2019). Moreover, deputies often initiate their own professional learning activities which are mostly inconsistent and ad hoc; thus it is

important that principals provide mentoring and coaching, and establish a collegial relationship with their deputies (Leaf & Odhiambo, 2017).

School Effectiveness (SE)

A considerable number of studies have attempted to find out what are the components of an effective school. The Coleman report (1966) claimed that socioeconomic status, race, and other family contextual variables had a greater influence on student achievement compared to the effects of school variables. Thus, in response, scholars have attempted to establish that schools do and can make a difference irrespective of students' socioeconomic status or family background (Mortimore, 1993). Consequently, educational reform initiatives have focused on identifying influential factors of school effectiveness (Ghani, 2014; Trujillo, 2013).

There have been different propositions and debates regarding a proper definition of the concept 'school effectiveness'. Mortimore (1991) claims that an effective school is "one in which pupils progress further than might be expected from consideration of its intake" (p.9). Cobanoglu and Yurek (2018) define school effectiveness as the capability of achieving the aims and goals planned by the school. Several researchers have defined school effectiveness based on just academic achievements, however, school effectiveness does not depend only on academic outputs (Talebloo et al., 2017). Day and Sammons (2013) state that socials outcomes of schooling are as important as academic outcomes. Policy makers rely on the claim that schools do make a difference in student outcomes as a guide in their educational reforms.

Laying the foundation for effective schools, Edmond (1986) suggested the characteristics of effective schools as a safe and orderly

environment, opportunity to learn and time on task, a clear and focused mission, instructional leadership, high expectations, frequent monitoring and positive home-school relations. These characteristics were adopted by Lezottte (1991) and formally identified them as the seven correlates of effective schools. The correlates of effective schools have been linked with student success. The correlates of effective schools enable students to attain high results despite their socioeconomic status (Magulod, 2017). Among these variables, the instructional leadership of the school leaders and administrators is considered to have the biggest impact on school effectiveness (Cobanoglu&Yurek, 2018).

School Level as a Moderator

Moderating variable is an essential part of theory in business and social science (Memon et al., 2019). It refers to a third variable known as the moderator that impacts the relationship between two variables. The moderator interacts with the independent variable and can impact the direction and the strength of the correlation between the independent and dependent variable (Awang, 2015). According to Faroog and Vij (2017) interaction effects are used to test the model hypothesis that is not causal in nature. Moderators demonstrate the generalizability and external validity of the relation between independent variable and the outcome, explaining the context under which the relation holds (Fairchild & McQuillin, 2010).

Researchers have posited that organizational factors can impact the school leader's behaviors and functions (Nguyen et al., 2018). The contextual factor, school level, has been proposed to have a significant effect on instructional leadership practices (Hallinger, 2005; Wildy & Dimmock, 1993). Robinson, Bendikson, and Hattie (2011) claim that the impact of instructional leadership on student

learning differs between primary and secondary school. Nonetheless, school level is one of the most misunderstood contextual variables (Heck, 1992). In addition, literature available on this subject is limited and most focus specifically on either primary or secondary level (Wildy & Dimmock, 1993).

Firestone and Herriott (1982) claim that the basic organizational structure of primary and secondary schools is distinct, thus different perspectives should be used to define and improve effectiveness. Similarly, Heck (1992) point out that in addition to structural and contextual differences, there may be differences in principal leadership between primary and secondary schools. According to Firestone, Herriott, and Wilson (1984) although primary and secondary schools are different, their differences are overlooked since they are characterized to be bureaucratic and loosely linked systems. Yet, contextual differences can lead to variation in the school leader's instructional leadership practices, consequently affecting the performance of the school (Heck, 1992). Hence, primary and secondary schools cannot be considered and handled in the same manner.

Wildy and Dimmock (1993) argue that principals at primary school level are more responsible for instructional leadership than secondary school principals. This difference could be due to the fact that the settings of primary schools are more agreeable for principal instructional leadership than secondary schools (Nguyen et al., 2018). According to Firestone et al. (1984) goals are shared less and power is more decentralized in secondary schools than in primary schools. It is especially challenging for school leaders to effectively focus on instructional improvement in secondary schools because of the greater size and organizational structure of secondary schools

(Hallinger, 2012). Rather than focusing on technical processes, principals concentrate on allocation of resources and external relations at secondary level (Firestone & Herriot, 1982). Therefore, principals in secondary level are unable to engage in activities to improve teaching and learning, unlike in primary level where principals communicate with staff and keep track of daily work thus being more involved in practices related to teaching and learning outcomes (Gedik & Bellibas, 2015). Evidently, school leaders are required to perform different instructional tasks at different school levels, hence how they are perceived also need to be differentiated (Firestone & Herriot, 1982).

The effective school research indicates that instructional leadership can make a difference in outcomes of schooling. Instructional leadership is acknowledged to have a higher impact on student outcomes compared to other leadership styles, however it is not clear whether the value added to student outcomes through instructional leadership is the same between primary and secondary level (Bendikson et al., 2012).More evidence is required to prove whether school principals in both primary and secondary school level have become more directly involved in instructional processes of the school (Hallinger, 2005). Most studies have focused either on primary or secondary schools and majority of the findings have not been very consistent. Therefore, in order to have a better understanding of instructional leadership of the school leaders and how they influence school performance, it is important to examine whether school level has any impact on this association.

Based on the review of the literature, a hypothesized conceptual model was adopted for this study. In this model, instructional leadership is viewed as the independent variable and

school effectiveness is the dependent variable. School level is hypothesized as a moderator variable in this study. Based on the model the following hypotheses are formulated:

H1: Deputy principal's instructional leadership has a direct and positive relationship with school effectiveness.

H2: School level moderates the relationship between deputy principal's instructional leadership and school effectiveness.

Methodology

Research Design, Population and Sampling

This study employed a quantitative survey approach. A questionnaire was distributed in 12 public schools of Malé, the capital city of Maldives. There are just 14 public schools in Malé, all located in close proximity to each within a distance of about 3.2 square miles. 12 of these schools provide both primary and lower secondary education and follow the same curriculum, thus were chosen for this study. The primary and secondary sections have their own respective deputy principals, head teachers and teachers. Public schools in the capital city Malé were selected for this study because almost one third of the of the country's population reside in the capital city.

The population of this study consisted of 1509 teachers. Respondents were chosen using stratified random sampling to represent teachers from primary and secondary level. This is because the representative sample should closely reflect the characteristics of the population (Weiss, 2012). According to Sekaran and Bougie (2016), the minimum sample size required for 1509 is 346 respondents based on the recommended table by Krejcie and Morgan (1970). However, a higher number of respondents were selected to avoid any issues in data analysis (Creswell, 2018).

Research Instrument

Incorporating two instruments, a closed ended questionnaire was used to measure the variables in this study. The questionnaire had three parts: Part A contained demographic information, part B comprised of 22 items for measuring Instructional leadership using the Principal Instructional Management Rating Scale (PIMRS) teacher short form (Hallinger, Wang, & Chen 2013), and Part C included 27 items to assess school effectiveness using the correlates of effective schools (Herman, 2017; Lezotte & Snyder, 2011).

The PIMRS is an established survey instrument for assessing instructional leadership and it is designed to provide data on multiple dimensions of the instructional leadership roles and from a variety of perspectives including those of teachers, principals, assistant principals and supervisors (Hallinger & Wang, 2015). The PIMRS Teacher Form displays a consistent high level of reliability for all three levels of scale across school levels (Hallinger et al., 2013). The effective schools scale was synthesized based on the works of Baldwin et al. (1993), Herman (2017), Lezotte (1991), and Lezotte and Snyder (2011). The correlates of effective school area set of indicators which are codependent and act together to achieve school effectiveness (Magulod, 2017; Talebloo et al., 2017). The 47 items of the instrument were assessed using a five-point Likert scale.

The instrument was finalized after a pilot study carried in one of the public schools. The pilot study helps to determine the relevancy and reliability of the instruments. It confirms whether the items in the scale are clear, precise and comprehensive to the respondents. To reduce data bias, respondents were ensured of their anonymity and confidentiality of the study. The reliability analysis showed that Cronbach's Alpha coefficient for instructional leadership

and school effectiveness were .954 and .960 respectively. Thus, the scale was considered to be a reliable tool.

Data Analysis

SPSS and AMOS Version25.0 were used for data analysis. Descriptive statistics analysis was carried out to explain the characteristics of the respondents and check the level of two variables. Prior to the analysis, it is important to assess the data for normality. Multivariate normality can be detected by examining the skewness and kurtosis. For instructional leadership the skewness values were between -.506 and -1.093 while the kurtosis values were between -.695 and .856. For school effectiveness the skewness values were between-.548 and -1.083 while the kurtosis values were between -.246 and 1.889. The values were in the range between ±1.96, thus considered as normally distributed (Hair et al., 2014).

Since a survey questionnaire was used to collect information from same respondents at the same time to measure both the independent and dependent variables, there was a possibility of bias due to common method variance (CMV), which can result in inaccurate estimates of impacts and relationships between variables (Chang, van Witteloostuijn, & Eden, 2010). Therefore, to ensure the consistency and validity of the results without common method bias, the CMV test using Harman's single factor score was carried out to check if a single factor was accountable for variance in the data. The variance for single factor was 43.8% which is less than 50%, indicating that CMV was not an issue in this study (Tehseen, Ramayah, & Sajilan, 2017).

Structural equation modeling (SEM) was adopted to determine the relationship between instructional leadership and school effectiveness and to examine the interaction effects of school

level on the relationship between instructional leadership and school effectiveness. SEM is a multivariate technique that can be used to find the relationship among various variables, mediation, moderation, error estimation as well as model fitness. (Hair et al., 2014).

Results

Out of a total of 500 questionnaires, 379 responses were received. The responses were screened for any inconsistencies, missing data and outliers. According to Sekaran and Bougie (2016) the information returned by participants should be checked for any omissions, illogical or inconsistent data and dealt appropriately when editing the data. Hence, the data were analyzed based on the 359 responses.

Demographic Profile of Respondents

Descriptive analysis was carried out to find the demographic information of the respondents. Table 1 represents the demographic details of respondents.

Table 1.

Demographic Information of the Respondents

Demographic Characteristics		Frequency	Percentage (%)
School Level	Primary	182	50.7
	Secondary	177	49.3
Gender	Male	72	20.1
	Female	287	79.9
Age	20-30 years	139	38.7
	31-40 years	138	38.4
	41-50 years	64	17.8
	51 and above	18	5

Years of experience as a teacher	1 year	49	13.6
	2-4 years	82	22.8
	5-9 years	97	27
	10-15 years	68	18.9
	More than 15 years	63	17.5
Years of experience with current deputy Principal	1 year	123	34.3
	2-4 years	117	32.6
	5-9 years	81	22.6
	10-15 years	25	7
	More than 15 years	13	3.6
Total		**359**	**100**

Table 1 above showed that 182 (50.7%) respondents were from primary level and 177 (49.3%) respondents were from secondary level. The number of female respondents of 287 (79.9%) were higher than that of males 72(20.1%). The majority of respondents which is 139 (38.7%) were between 20 to 30 years old. Most respondents which is 97 (27.0%) had working experience between 5 to 9 years. Finally, the majority of respondents represented by 123 (34.3.7%) had just 1-year experience with the current deputy principal.

Reliability and Validity

To assess the reliability and validity of the instrument, the questionnaire went through a pilot test. A pilot test is a small-scale trial conducted before the study to ensure that relevancy and reliability of the instruments. Next the data was analyzed using Exploratory Factor Analysis (EFA) procedure to explore and determine the interrelationship among variables (Pallant, 2016). Based on EFA, some items were removed due to poor factor loadings.

The following table displays the comparative results of reliability and factor analysis of the scales.

Table 2.

Reliability and Factor Analysis Results of Measuring Scales

Variables	Number of items	Cronbach Alpha (α)	Explained Variance (%)	Factor Loading	KMO	p
IL	19	0.954	69	.552-.837	0.954	0.000
SE	24	0.960	65	.593-.788	0.950	0.000

In this study, Confirmatory Factor Analysis (CFA) has been performed to validate the measurement models of the latent constructs. CFA is a validating procedure which can assess the unidimensionality, validity and reliability of latent constructs (Awang, 2015). The convergent validity was checked through the values of Average Variance Extracted (AVE) and reliability test was done by testing the composite reliability (CR). The convergent validity is achieved when the AVE for each construct is 0.5 or higher and the composite reliability is attained when the CR index is greater than 0.7 (Hair et al., 2014). Table 3 below indicates that measurement model have met the criteria necessary to achieve convergent validity and composite reliability.

Table 3.

Composite Reliability and AVE analysis

Variable	CR	AVE
Instructional Leadership	0.927	0.811
School Effectiveness	0.910	0.772

To determine how well the items measure their respective constructs, the fitness indexes of the specified model are checked.

There are several fitness indexes to check model fitness from the three categories 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 the fitness chosen represents one from each category (Baistaman et al., 2020). The goodness-of-fit indices used in this study include the normed chi-square test (CMIN/DF), the Comparative Fit Index (CFI) and the Root Mean Square of Error Approximation (RMSEA). Table 4 demonstrates that the fitness indices have met the suggested threshold value of a good fit (Awang, 2015; Hair et al., 2014).

Table 4.

The fitness indices of measurement model

Category	Acceptable Value	Test Value
Absolute Fit	RAMSEA ≤ .08	0.063
Incremental Fit	CFI ≥ .90	0.900
Parsimonious Fit	Chisq / df ≤ 5	2.420

Once the CFA procedure was completed, Structural Equation Modeling (SEM) was performed to test the proposed hypothesis on the relationships between the variables. SEM is a powerful multivariate approach combining aspects of factor analysis and multiple regressions for testing relationships among measured variables and latent constructs. SEM can assess the measurement properties and analyze the theoretical relationships (Hair et al., 2014).

Level of IL and SE

Descriptive statistics were used to analyze the mean and standard deviations of the data collected. The level of instructional leadership and school effectiveness were determined by a mean score determination scale of three levels with 1.00-2.33 as low level, 2.34-3.67 as medium level and 3.68-5.00 as high level (Amlus et al., 2015). The following table reports descriptive statistics for the variables.

Table 5.

Descriptive Statistics: Mean, Std. deviation and Level of IL and SE

Dimension	Mean	Std. D	Level
Defining School Mission(DSM)	4.06	0.708	High
Managing Instructional Program (MIP)	3.84	0.869	High
Promoting Positive School Climate(PPSC)	3.67	0.942	Medium
Instructional Leadership (IL)	**3.89**	**0.988**	**High**
Focused Mission and Clear Goals (FMCG)	4.08	0.604	High
Maximized Learning Opportunities (MLO)	3.96	0.703	High
Strong Instructional Leadership (SIL)	3.88	0.708	High
School Effectiveness (SE)	**3.98**	**0.830**	**High**

As shown in Table 5, the overall mean of instructional leadership is 3.89 and the standard deviation is .988. Thus, it can be assumed that the deputy principal's IL level in public schools of Malé are at a high level. Subsequently the overall mean of school effectiveness is 3.98 and standard deviation is .830 which can be interpreted as a high level of SE in public schools of Malé.

Hypotheses Testing

Structural Equational Modeling (SEM) technique was applied to test the hypotheses that were formulated to answer the research questions. Prior to hypotheses testing, the model fit indices were

examined. Figure 1 shows the research model that was examined using SEM.

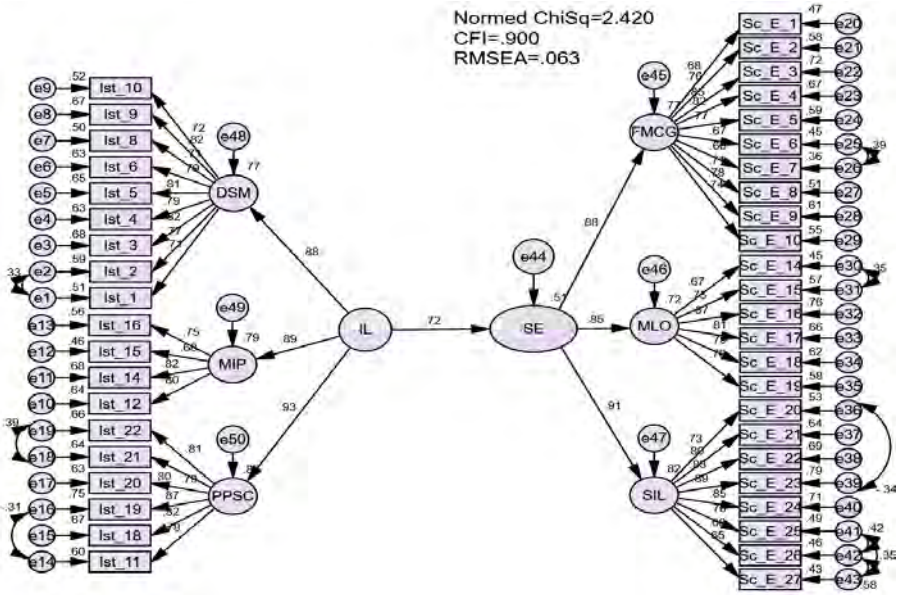

Figure 1.

Fit Indices and Parameter Estimates of Hypothesized Model

To assess how well the theoretical model fits the dataset, the goodness of fit indices and the parameter estimates were examined. As depicted in Figure 1, all the model fit indices of the hypothesized model have met the required thresholds (Hair et al., 2014). Therefore, the research model was considered valid for hypotheses testing.

Relationship between IL and SE

A path analysis was used to test the first hypothesis of the study. Table 6 presents the results of hypothesis 1.

Table 6.

The Regression Path Coefficient and its Significance

			Estimate	S.E.	C.R.	p
School Effectiveness	←	Instructional Leadership	0.687	0.075	9.151	0.001

Findings in Table 6 show that there is a significant relationship between instructional leadership and school effectiveness. The probability of getting a critical ratio as large as 9.151 in absolute value is less than 0.001 (Table 6), specifically, the regression weight for instructional leadership in the prediction of school effectiveness is significantly different from zero at the .001 level (two-tailed). Moreover, the parameter estimates also supported the adequacy of the relationship. The path coefficient between instructional leadership and school effectiveness is 0.717 and is statistically significant. The result supports the hypothesis which indicates that deputy principal's instructional leadership has a direct and positive relationship with school effectiveness.

Moderation for School Level

A moderator variable is a third variable that alters the relation between a predictor and an outcome, and can modify the direction and strength of the relation between the two variables (Fairchild & McQuillin, 2010). Moderation analysis enables to find out whether an intervention has similar effects across groups (Farooq & Vij, 2017). Moderation is tested by the coefficient of interaction. SEM technique was used determine if there was statistical moderation.

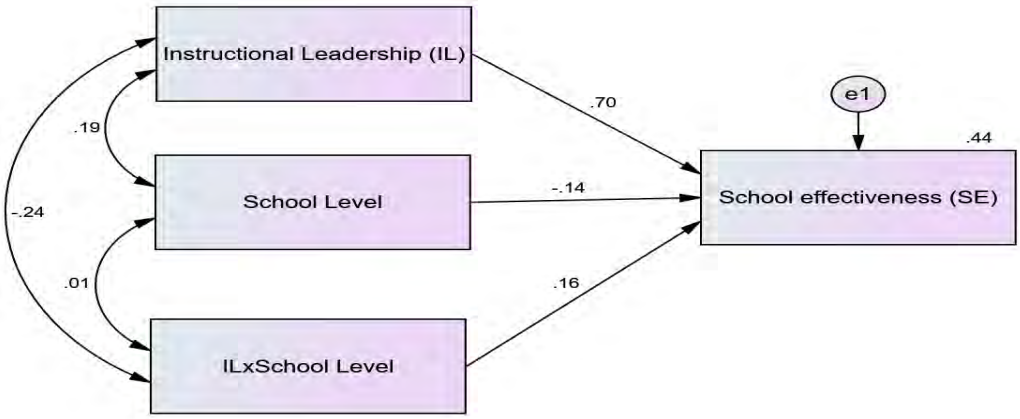

Figure 2.

Moderation for School Level

Figure 2 shows the statistical model for moderation. In this moderation model Instructional leadership (IL)is the independent variable, School effectiveness (SE) is the dependent variable, school level is the moderator variable, and IL x School Level is the interaction of the independent and moderator variable. In this case, the moderator is not a part of a causal sequence, but is postulated to have an interaction effect.

Table 7.

Hypothesis Testing (Moderation)

Path			Estimate	S.E.	C.R.	p
SE	←	IL	0.699	0.041	16.87	0.001
SE	←	School Level	-0.137	0.04	-3.409	0.001
SE	←	IL x School Level	0.169	0.042	4.047	0.001

Results in Table 7 reveal that the regression coefficient of product term (IL x School Level) on School Effectiveness is .169, which is positive and statistically significant. A significant interaction term with a positive beta would indicate that school level was strengthening the relationship (Dardas & Ahmad, 2015). The findings suggest that the impact of instructional leadership on school effectiveness was moderated by school level. Thus, the findings have supported hypothesis 2. This is a partial moderation because the main impact is significant even after the moderator entered the model (Awang, 2015). Subsequently, in order to determine which group (primary level or secondary level) had the most impact, a pairwise comparison of estimates between the two groups were made and the critical value for the comparisons was found.

Table 8.

Group Comparison

			Primary		Secondary			
Path			Estimate	p	Estimate	p	z-score	Result
SE	←	IL	0.669	0.001	0.91	0.001	3.821***	Significant

Note: p*** < 0.001

Table 8 shows the pairwise comparison of the two groups: primary and secondary. The critical value for the difference between

the groups is 3.821 and is statistically significant at $p < .001$. Based on the parameter estimates which is .769 for primary level and .821 for secondary level it can be deduced that the impact of instructional leadership on school effectiveness is more pronounced in secondary level when compared with primary level.

Discussion

The data was analyzed using SEM technique. There are two main findings from this study. Firstly, the results showed that deputy principal's instructional leadership is significant for school effectiveness. The finding is consistent with past findings (Alig-Mielcarek, 2003; Leaf &Odhiambo, 2017). The results are in line with the findings of Setwong and Prasertcharoensuk (2013) who claim that factors of instructional leadership have direct effects on school effectiveness. Similar to this study, Ali (2017) found that there is a strong relationship between instructional leadership and school effectiveness. The results are also supported by the findings of Robinson, Lloyd,and Rowe (2008) who confirm that instructional leadership is one of the most effective leadership models related to school effectiveness and improvement. Likewise, Hassan et al. (2018) claim that instructional leadership is a leadership model that should be embraced by all school leaders to achieve excellence in schools.

When school leaders practice the elements of instructional leadership namely: defining school mission, managing instructional program and promoting positive school climate, the outcomes of schooling is enhanced (Ghavifekr, Radwan, & Velarde, 2019; Si-Rajab et al., 2019). The results indicate that by sharing the vision and the mission of the school, the school leaders motivate the stakeholders to attain the desired goals. School leaders develop a school mission that offers an instructional focus for teachers, creating a conducive

learning environment around the school which in turn promotes student learning (Gaziel, 2007). School leaders can shape the goals and actions as well as motivate others by setting missions, visions and values (Craig, 2021). Moreover, the instructional leader's task of managing the instructional program focuses on supervision and evaluation of instruction, coordination of curriculum and monitoring of student progress which are crucial functions for an effective school. This component of instructional leadership involves the school leader's contribution to instructional practices including the provision of necessary resources required by teachers to cater for students learning and improvement (Bhengu, Naicker, & Mthiyane, 2014). Additionally, instructional leaders set high standards and expectations to ensure that a positive learning climate is established in the school. Likewise, they make sure that instructional time is protected and professional development is supported. The presence and visibility of the school leader impacts the school learning climate indirectly effecting student achievement (Gaziel, 2007).

The results show that deputy principal's instructional leadership role is critical for the improvement of school effectiveness. Consistent with Leaf and Odhiambo (2017), when deputy principals perform instructional leadership tasks, they apparently contribute to the improvement of school's performance. Hence it is important to redefine the duties of the deputy principals to enhance their instructional leadership practices (Barnett, Shoho, & Oleszewski, 2012; Celikten, 2001).

Secondly, the results of moderation analysis showed that the variable school level moderated the relationship between deputy principal's instructional leadership practices and school effectiveness. The results of this study are supported by past research findings

(Firestone & Herriott, 1982; Sismen, 2016). More and less effective schools are renowned by the degree of principal instructional leadership; and evidence suggests that instructional leadership differs between primary and secondary schools (Robinson et al., 2011). While the current study has recognized school level as a moderating variable, the findings indicate that the interaction effect of school level is higher in secondary level compared to primary level, which is contrary to earlier findings. Previous findings claim that primary schools are more compatible settings for principal instructional leadership than secondary schools (Nguyen et al., 2018). Due to the greater size and complexity of secondary schools, instructional leadership cannot be carried out the same in secondary schools as it is practiced in primary school (Gedik & Bellibas, 2015; Hallinger, 2012). Despite these challenges, the instructional leadership of secondary principals is crucial for student success (Robinson et al., 2011). Accordingly, instructional leadership should not only be limited to primary schools (Sismen, 2016). However, there is a lack of references to the adaptation of instructional leadership to secondary school regardless of the grounding in instructional leadership research on primary schools (Hallinger, 2005). The distinctive findings of the current study shed new light to the understanding of school level as a moderator variable, suggesting that the interaction effect of school level in the relationship between instructional leadership and school effectiveness is significant, and it is more prominent at secondary level than at primary level.

Table 9.

Summary of the Main Findings of the Study

H(x)	Hypothesis	Reference	Finding
H1	Deputy principal's instructional leadership has a direct and positive relationship with school effectiveness	Figure 1, Table 6	Accepted
H2	School level moderates the relationship between deputy principal's instructional leadership and school effectiveness.	Figure 2, Table 7, Table 8	Accepted

Conclusion and Implications

The objectives of this study were to examine the relationship between deputy principal's instructional leadership and school effectiveness and to determine whether school level is a moderating variable in the relationship between instructional leadership and school effectiveness respectively. The results of this study have showed that deputy principal's instructional leadership has a significant relationship with school effectiveness. In addition, the moderation analysis revealed that this relationship was moderated by school level. More specifically, the interaction effect was higher for secondary level compared to primary level. The findings suggest that in the Maldivian context, deputy principals practice instructional leadership roles in their schools. Moreover, the level of instructional leadership and school effectiveness is high in the public schools. The tasks of instructional leadership include framing and communicating the school goals, managing instructional program through supervision, evaluation and coordination, and promoting a positive climate by protecting the instructional, supporting professional development, keeping high visibility and ensuring high academic

and professional standards. When school leaders incorporate these into their leadership behaviors and activities, the teaching and learning process improves in the school. In order to create conducive environments for teachers and students to reach their full potential, school leaders should balance their administrative and managerial duties with instructional leadership functions.

The quality of education at all levels is a major policy challenge faced by the Maldivian education system. The learning achievement of students at the primary are less than satisfactory, especially in skills of literacy. In addition, the underachievement of students at the end of the lower secondary level hinders them from enrolling in higher secondary education. Thus, there is a pressing need to explore the issues contributing to low performance and implement measures to raise the achievement of students. Improving school effectiveness is not the role of only school principals, but it requires the support from all stakeholders including policy makers, principals, deputy principals, teachers and parents. Subsequently, the systematic issues of learning outcomes require urgent action from policy makers and educational practitioners.

The results of the present study demonstrated the critical role of deputy principal's leadership in the outcomes of schooling. Deputy principals cannot function effectively unless they are given opportunities to enhance their role and practice instructional leadership. Hence, it is essential that system leaders redefine the deputies' role to include more on instructional leadership and less on administration. The reorganized role of deputy principals should acknowledge their instructional leadership role and give deputies the opportunity to work closely with teachers and follow up the teachers'

professional work (Abrahamsen, 2017). This redirection is necessary to improve the quality of education in schools.

The findings suggest the significance of establishing the instructional leadership role of deputy principals. Appropriate skills and training need to be provided to deputy principals for them to effectively implement and practice instructional leadership in the school. The selection, training, and development system of school leaders should ensure that they acquire the relevant competencies to work in challenging contextual conditions (Yıldırım & Yenipınar, 2021). It is equally imperative that principals provide support and mentoring to their deputies. Principals need to establish an environment of trust and frequent communication with deputies, giving them the flexibility and autonomy required to exercise their instructional leadership role.

In this study school level was found to be a moderating variable that affects the relationship between instructional leadership and school effectiveness. In addition, comparison between the two groups primary and secondary levels showed that the interaction effect was higher for secondary level compared to primary level. This implies that the impact of deputy principal's instructional leadership on school effectiveness is higher at secondary level when compared with primary level. Even though primary and secondary schools are distinctive institutions with different organizational structures and leadership needs, instructional leadership can be effectively carried out in secondary schools. Since secondary schools are larger in size with departmentalization, they usually have more additional layers in hierarchy. Therefore, school leaders need to share instructional roles with other staff including lead teachers. This could be achieved by applying a distributive approach, nevertheless the school leader

should have an active role in instructional leadership. They should focus on building a collaborative school culture where professional development is supported. School leaders need to empower and motivate teachers to realize the school goals. Teachers' work should be recognized and rewarded. Considering the contextual differences between primary and secondary schools, school leaders including deputy principals should exercise their instructional leadership accordingly

Although the findings of the study have supported the hypotheses, it also has limitations. The fact that the data analyzed solely stems from the view of teachers limits the power of analysis and evaluation. To obtain different perspectives on this subject, data from multiple groups including teachers, deputy principals and principals can be examined. In addition, the spatial disparity between the capital city Malé and the outer islands is a limitation of this study. Future researches should consider extending research outside the capital city. Furthermore, conducting the research in Malé constrained the sample size of schools to just 12 schools, challenging the generalizability of the findings. Duplication of the study on a national scale covering other parts of the country will contribute to generalizability of the findings. The choice of school type is a delimitation of the study. Public schools were selected for this study since public schools represent approximately 97% of the total schools in Maldives. These limits present opportunities for future research.

In sum, this study has contributed to the understanding of deputy principal's instructional leadership and its relationship with school effectiveness. Moreover, the evidence of school level as a moderating variable has added insight into the knowledge of school level differences in instructional leadership and school effectiveness.

Additional research with wider scope can be considered to support the findings of this study.

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