



Principal Leadership, Teacher Self-efficacy and Commitment to Students: Views from the Republic of Maldives

Mariyam Nasir^{1,3}, Naresh Kumar Samy^{2,3*}, Amiya Bhaumik³

¹ Ministry of Education, Maldives

² Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan

³ Lincoln University College, Malaysia

*Corresponding Author: naresh@umk.edu.my

Abstract: *Education plays a significant role in the people's human capital augmentation and socio-economic well-being in the Republic of Maldives. The literacy rate of Maldives is very high, and the nation has equal access to primary and secondary education. But the participation rate slips down as it moves to higher secondary education and beyond. Education is a priority; as a result, a significant amount of the government's budget goes to the education sector. Besides the government, parents and communities are ready and willing to spend massive volume on education. Despite all huge investments and achievements, the student's academic performance, skills, and values are not meeting the stakeholders' expectations. Poor academic performance discourages them from continuing the educational journey after completing the ordinary level (Grade 10). The Maldives has achieved the first-generation objective of providing universal access to primary education through the rapid enrollment expansion. Nevertheless, evidence from various sources shows that education quality in the Maldives is moderate and needs more fabulous transformation in the schools at all levels to address the industrial revolutions. School principals and teachers are the immediate groups capable of refining the education system backed by the government. The high-performance support of teachers as the spearhead of educational activities in the school is essential. Indeed positive self-efficacy is critical for teachers in approaching complex tasks and activities to improve students' performance. Hence there is a need to concentrate and bring forward the prominent role of principal leadership, teacher self-efficacy and commitment to the students in public schools of Maldives. This paper aims to point out the pressing need for educational uplift and propose research issues in this area to enrich the present body of knowledge. Practical and theoretical implications within the education sector included..*

Keywords: Public school, principal leadership, student performance, teacher self-efficacy, Maldives

1. Introduction

The Republic of Maldives is a group of islands scattered in the Indian Ocean, consisting of 1192 coral islands situated across the equator. The Maldives lies southwest of Sri Lanka and India. The length of the archipelago is 750km, with the widest point measuring 120km. The islands are low-lying and small, with an average size of the islands being 1 square kilometre. There are 187 inhabited islands, 853 uninhabited islands and 164 resorts (National Bureau of Statistics, 2020). The Maldives is a developing country, and the economy focuses on tourism and the fishing industry. The school system of Maldives consists of government schools, private schools, public-



private partnership schools and community schools. Schools cater for students from foundation to higher secondary education. The schools' enrollment ranges from 22 to 2000 plus students, depending on the islands' population. Schools in the Greater Male' area, including the capital Male' City, are highly populated. The Maldives has one of the highest literacy rates in South Asia, reaching as high as 98% in 2017. The medium of instruction of all the schools except one Arabic medium school is English. In the 1960s, English medium schools began to establish in the Maldives. Apart from the subjects of Islamic Studies, Dhivehi (the study of national language) and the Quran, all the other school subjects are taught in English (UNESCO-IBE, 2011).

The Constitution of Maldives (2008) states that everyone has the right to education without discrimination. The State shall freely provide primary and secondary education. Parents and the State must provide children with primary and secondary education. Higher education opportunities shall be generally accessible to all citizens (Article 36, Maldives Constitution). Today, Maldives has become the first South Asia country to provide 12 years of compulsory education and 14 years of free schooling. Around 88 per cent of students complete their secondary education by taking the General Certificate of Education, Ordinary Level (GCE O'Level) and Higher Secondary Certificate (HSC) examinations (Ministry of Education, 2014, 2019). Free school education, including preschool, is provided in all inhabited islands across the country for all students under the age of 18 years. The government provides school textbooks, stationery and other learning materials. School end examination fees for GCE O'level and General Certificate of Education Advanced Level (GCE A'level) students in the country are also paid for by the Government (Quality Assurance Department, 2018).

Some of the remarkable successes of the education sector of the Maldives in establishing a modern public education system across the country are visible in the Situation Assessment Report of the Most Disadvantaged Schools in the Maldives. One success mentioned is providing access to pre-primary, primary and secondary education across the Maldives. Introducing the first national curriculum in 1984, revising it from 2009 to 2014 and introducing a new curriculum is also a tremendous success, as stated in this report. Developing textbooks, training teachers, building new schools, and upgrading and refurbishing several existing schools are remarkable successes. The Maldives achieving a literacy rate of 89% in 2000 was another notable success compared to other countries (QAD and UNICEF, 2019).

Principals and other school leaders play a significant role in student performance. The principal leadership affects the teachers' performance and, ultimately, the students. Bartoletti & Connelly (2013) stated that great schools exist with great leaders, which is true in many circumstances. Principals should be educational visionaries. They should be instructional leaders who are very familiar with the curriculum and acts as curriculum leaders. They need to be assessment experts and disciplinarians who help build the community. Schmidt-Davis & Bottoms (2011) believe that principals alone cannot improve schools or teachers. Teachers and principals should work together for school improvement. Principals are to lead their schools, work collaboratively with other staff, and share the decision-making process with their teachers and other staff members. It is vital, thus, to explore and understand the indenture between the principal leadership role, teacher self-efficacy, and commitment to student performance.



2. Issues in the Maldivian Schools

Education plays a crucial role in human capital development, and there is an urgency in developing the human capital of the Maldives. Education is of high priority for the government of the Maldives and the community. As a result, the government's budget for the education sector in 2019 and 2020 arises (National Bureau of Statistics, 2020). Parents and communities spend a vast sum of money on education-related activities, apart from the government. Despite all these heavy investments in education, it is noticeable that students' achievements are average, perhaps not to the stakeholders' expectations. Students' academic performance, skills, and values seem not to parallel with the stakeholders' expectations (Ali, 2017). Most of the students who complete the ordinary level (Grade 10) quit their education because they could not join the advanced group due to poor academic performance. According to the Ministry of Education of Maldives (2019) statistics, the total enrolment is highest at the Primary levels (Grades 1-7) each year. Enrolment decreases as it moves to higher levels. Less than 50% of the students who complete grade 10 are eligible to study in secondary higher education. The gender disparity is significant at this level, and there was a sharp drop in enrollment, as mentioned in the Education Sector Analysis of Maldives (2019).

High access to pre-primary education is one of the significant achievements in the education sector. The participation rate at the primary level increased since schools implemented the attendance policy, which the Ministry of Education introduced in the year 2015. As a result, 'children at risk' are identified, and taken actions to reduce the dropouts from the school system (MoE, 2019). Nevertheless, it was highlighted in the Education Sector Analysis Report (2019) that there is a sharp decrease in the number of students who move from the secondary to the higher secondary level, which in turn adversely affects the number of students going into higher education.

The Maldives' national curriculum emphasizes providing holistic education to equip the students to face the challenges of their lives. They need to be equipped with the required knowledge, skills, values and attitudes to face the challenging world. However, most of the schools in the Maldives are focusing on improving the students' academic results, forgetting to provide holistic education. There is a tremendous challenge for the principals as they have to decide whether they have only tried to improve exam results or develop students' character (Shiuna & Sadiq, 2013). Students were not prepared for any specific field at the secondary level of education due to a lack of skill development. The authors also mentioned that the Maldives' teaching was too result-oriented, whereby parents and teachers emphasized examinations grades over skill-based learning. Research has confirmed that clarity, sequencing, and delivery of questions and the psychological safety of the environment influence student perceptions, motivation, and the achievement of educational outcomes (McComas & Abraham, 2012). Therefore, teachers need professional support from the principal to improve the lacking area. A few review reports mention that the principal lacked capacity as an instructional leader and a manager. The importance of school leadership and the principal's role in school improvement is visible in many external review reports and the need for training (QAD, 2018).

Aturupane and Shojo (2012) also stressed that the quality of education is a significant policy challenge faced by the Maldivians. The country has achieved the first-generation objective of providing universal access to primary education through the rapid expansion of enrollment. These



authors clearly stated that evidence from various sources shows that education quality in the Maldives needs urgent attention. A situation assessment based on the 55 schools identified as the most disadvantaged school in the Maldives was reported by QAD and UNICEF. The purpose was to develop a strategy and an action plan to support these schools—two significant issues that require immediate intervention. One of the highlighted issues is the lack of attention to accountability and regular monitoring by school leaders. The second issue is the inadequate skills of school heads in critical aspects of school leadership. These two issues are within leadership and management (QAD & UNICEF, 2019). Therefore, it is evident that the principals and other leaders are not fulfilling their roles and responsibilities. These would affect the students' academic and non-academic performance.

Yusoff (2021) states that the principals face leadership practices, poor communication skills, and a lack of knowledge on prioritizing activities. Norhaini (2006) has supported this idea and stated that in some situations, principals appear to be less proactive, less innovative, often lose focus, and often lose focus on management goals. He also mentioned that principals are not open and welcoming to changes and behave passively in dealing with problems even though routine management. Yusoff (2021) noted that the findings of his study showed that principals failed to provide an appropriate model and influence teachers' innovative work behaviour. The principals must be teachers' source of new ideas for professional learning. This study also revealed principals stimulate the teachers' intellectuals by making them re-evaluate their assumptions about the tasks performed at school. They inspire them with new ideas, encourage them to reflect on current practices towards students, and relook their practices and teachers to learn with each other.

3. Principal leadership, teacher self-efficacy and students performance

Effective leadership of principals play a vital role in school improvement and student performance. Principals are responsible for ensuring the quality of education provided to the students. Principals need to empower the teachers as teachers are the leading key players in educating the students. As stated in Education Dive (2021), principals can be influential leaders by empowering teachers to do their best. Providing feedback on the teachers' work is a vital role of the principal. Observing the teachers' work and giving feedback after looking at easement is helpful for the teachers to grow and develop day by day. Miller (2021) states that providing feedback to the teachers is one of the critical roles of the principals and assistant principals. He mentioned that this was not successful as they usually do this through classroom observations and conducting individual conferences. The concerns raised included that principals are out of touch and don't visit the classrooms enough to provide accurate feedback. Therefore, the school leaders need to be instructional leaders to support the teachers and enable them to learn and grow. Abdulla et al. (2013) state that the school principals are instructional leaders in leading curricular instruction in school. Chair et al. (2019) also describe the school principal as an instructional leader.

The principal of the school is the most responsible agent to the students, teachers, parents and the community. Teachers need a supportive, knowledgeable leader who motivates the teachers and students to higher standards. The principal must be a role model who has a variety of leadership styles—Brolund (2016). Instructional leadership is one of the models which is a pathway for setting and communicating a clear vision and goals for teachers and students. It supports the teachers through coaching, mentoring and professional development.



Chair et al. (2019) stated that principals should always remain the lead learner in the community they serve. He highlighted how principals' leadership-learning implications and expectations occur. One way is to continue and expand knowledge of instructional leadership, especially in Professional Learning Communities. Consider creative uses of staffing, innovative professional learning for staff, and strategic hiring. The third way he has discussed is building and believing in a culture of school pride and high expectations. By remaining a leader learners in the community, principals can be role models for the teachers to grow in the field and improve student performance.

Principals as instructional leaders need to provide professional development for the teachers. Coaching and mentoring are very helpful for the teachers to grow professionally. Carraway & Young (2014) believes that teachers who receive coaching are more likely to practice new skills and implement them in their classroom. According to the School-Based Professional Development (SBPD) Policy of Maldives, the principals must plan and execute the SBPD programs in the school, and monitor and evaluate the effectiveness of the programs. The principal requires to participate in all these activities. Each professional staff is responsible for participating in a minimum of 15 hours of professional development in a year.

Furthermore, principals must support teachers and continuously encourage them to improve their teaching practices continually. The principal's instructional leadership roles would ultimately bring a positive change to the teachers and affect the students' school performance. Brolund (2016) stated that principals who are instructional leaders support their teachers in their practice by facilitating professional development opportunities. They also help teachers by providing coaching and mentoring to ensure best practices in their schools. When principals are instructional leaders, they positively affect the students' learning outcomes in their schools.

As school leaders, principals need to build trusting relationships with the staff as this would help the principals to nurture the changes he wants to see from the school. Waller (2021) has discussed six key ways to build relationships. Being authentic with the staff and sharing their interests, hobbies, and passions will allow relating to the team as it humanizes the leader. Sharing the leader's goal, having open conversations with the staff, smiling and bringing joy to them would help the leader build trust and good relationships. Being present for the staff and the leader's visibility is another crucial part that would allow the leader to be there for the team when they need it. Also, responding to the concerns of the staff and finding ways to acknowledge and then act on those requests would help build trust with the team. Listening and taking action are another key way as this would impact the work of the staff. Showing the staff that the leader is listening by taking actions is important. School leaders must know their staff very well. Knowing their skills, their interests, about their family and knowing many other things would help to develop the relationship. Sharing the decision-making process with the staff is also helpful to develop a good relationship with the staff. In schools many decisions are taken daily including large and small decisions. Hence, it's important to involve the staff in decision making whether the decisions are small or large. This would help the leaders to empower the staff. Accepting and apologizing for the mistakes is another way the principals can build a good relationship with the staff. As the principals are also human beings and make mistakes, admit the mistakes, apologizing and correcting the mistakes would help to forge a relationship built on trust.



Teachers working with the instructional leader have committed teachers to students' achievement. These teachers are concerned with the development of their students and struggle for the betterment of their students. They find ways and means to keep their students growing holistically. According to Mart (2013), passionate teachers are committed to their student's achievement. To Mart, teacher commitment is multidimensional, and some external factors may influence the commitment degree to the school, students, career continuance, professional knowledge base and the teaching profession. Effective teachers are very positive towards teaching. They enjoy teaching and engage the students genuinely.

Thien et al. (2014) conducted a study in Malaysia using a sample of 600 primary teachers. The results of this study supported teacher commitment as a multidimensional construct. The four dimensions highlighted in this study are (1) commitment to students, (2) commitment to teaching, (3) commitment to school, and (4) commitment to the profession. The authors conclude that teachers need to be committed to these four dimensions to improve the students' performance. Teachers' commitment affects the students in all ways. The success or failure depends on the teacher as the teacher is the critical player in the school who is responsible for the teaching/learning process. Students are committed and perform much better if the teacher is committed to championing students' agendas. Elementary school teachers had significantly higher levels of organizational commitment than high school teachers (Thien et al., 2014). Committed teachers engage in school activities and help the school achieve the school goals. These teachers remain working within the school and dedicate to going beyond the expectations (Yildiz & Celik (2017).

Self-efficacy is a person's belief in their ability to succeed in a particular situation. Cherry (2020) described these beliefs as determinants of how people think, behave and feel. According to the author, self-efficacy is part of the self-system that comprises a person's attitudes, abilities and cognitive skills. The growth of self-efficacy continues to evolve through life as people acquire new skills, experiences and understanding. Bandura believes that self-efficacy develops through mastery experiences, social modelling, social persuasion and psychological responses (Cherry, 2020). Our belief in our ability helps us achieve what we want. It affects the way we think, the way we act and how we feel about the world. Self-efficacy influences our determination and helps us to achieve our goals. Therefore, the teachers' self-efficacy or their beliefs in their ability to fulfil their role as a teacher influences their performance, affecting the students' performance. To Winn (2018), teacher self-efficacy is a critical factor in a teacher's success in the classroom. In current conceptualizations, a teacher's sense of self-efficacy relates mainly to teaching tasks, particularly within the classroom context (Friedman and Kass, 2002). Friedman (2003) states that self-efficacy is defined operationally based on three-dimensional conceptualization. Task, relations, and organization. Besides, Fairuz et al. (2013) believe that teacher self-efficacy affects the innovative work behaviour of the teachers.

As stated in the vision of the national curriculum of Maldives, schools are responsible for preparing the students for life by providing holistic education. Helping the students be on the right track and do the righteous things would lead them to develop good behaviour. Schools must help the students develop the required values and develop them ethically and morally. If the students do not develop holistically, their future will be affected. They will be unemployed if they do not have the required knowledge and skills. These will lead them to dissatisfaction and engage in unwanted activities.



Therefore, the principal role in ensuring the quality of education provided by the schools is significant.

Hence there is a need to find out the underlined causes of poor performance of students and the relation between the poor performance and the principal leadership, teacher self-efficacy and commitment to students. We propose research investigating leadership practices of principals, teachers' self-efficacy and their affective commitment to students. The following research questions are helpful for future research: 1) does principal leadership influence teacher commitment to students in schools of Maldives? 2) does teacher self-efficacy influence teacher commitment to students? And 3) does teacher self-efficacy mediate the relationship between principal leadership and teacher commitment to students? The findings of this research would be helpful for the principals, school leaders, policymakers and the Ministry of Education. Therefore, the need is to reform the schools to educate the children, build their confidence, shape their personalities and prepare them for life, as mentioned in the vision of the national curriculum of Maldives. Hence, schools need principals for educating, training and moulding the children to fit into different sectors of the country.

4. Conclusion

From the discussed points, there is a concern about the poor performance of the students at a different levels. The numbers of students who join higher secondary grades are less when compared to the number of students who complete their secondary stages due to poor performance. The school leavers are not skilled and equipped to perform in different jobs and higher education. Due to this, the school leavers are unemployed and social problems such as involvement in drug abuse have been a significant issue in the Maldives. Education policymakers in the Maldives and across the globe are searching for the leadership practices that matter most. As the principal is the responsible agent to implement the national curriculum and achieve the vision of the curriculum, the principal's leadership is vital for school improvement. The leadership roles of the principal directly affect the teacher's performance which finally affects the students' performance. Effective school principals help to ensure that innovations with teachers have a path guided by a mutual purpose. Principals are responsible for providing necessary training to the teachers under the School-Based Professional Development Program (SBPD) of Maldives. Widely accepted that quality teaching is best when teachers' professional development is in the school system. Continuing professional development would allow the schools to empower the teachers and build a learning culture in the school.

Teachers are the key players in implementing the curriculum in the classroom. Hence, the teacher's self-efficacy and commitment to the students are the most critical aspects of student performance. Teachers have a sense of being encouraged to experiment and explore. Teachers' self-efficacy escalated by providing proper training. The research proposed in this paper would benefit the practising principals, policymakers, and the Ministry of Education of Maldives. There is no visible research conducted in the Maldives to investigate the principal leadership, teacher self-efficacy, and student commitment. Thus, future research would support the Ministry of Education of Maldives to conduct professional development programs for the principals to improve the schools. This study is meaningful for school leaders to increase their competencies (leaders and teachers) and improve by utilizing in-house training or professional development programmes.



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Research and Application of Gesture Estimation Method Based on Computer Vision

Wu Chen^{1*}, S. B. Goyal^{1*}

¹ City University, Malaysia

*Corresponding Author: 85507685@qq.com, drsbgoyal@gmail.com

Abstract: *This paper will study the computer vision pose estimation algorithm and apply it to fall detection. At present, the problem of aging cannot be ignored. There are more and more elderly people living alone. Due to their poor physical fitness, they are very easy to fall in daily life and bring great harm to the body and mind of the elderly. Therefore, they are in great need of means to monitor the daily life of the elderly in real time and make judgments on fall events. Driven by the rapid development of computer vision technology, human pose estimation has been widely used in fields such as motion recognition, motion posture scoring, and assisted rehabilitation therapy. The core of pose estimation is to detect the joint information and bone information of the human body from the image, and connect them to form a bone image to help the computer understand the human body information. The use of pose estimation for fall detection requires the extraction of human joint point information and bone information. In order to extract human joint point coordinates and bone images from video sequences, this paper has done a lot of research on computer vision pose estimation. First, the background subtraction method is studied. After that, the openpose pose estimation algorithm is studied. Then studied the attitude estimation of Azure Kinect DK depth camera, focusing on its TOF principle and body tracking principle. After comparison, it is found that traditional pose estimation such as openpose is based on optical RGB images. In this paper, we mainly use Azure Kinect DK depth camera for fall detection. In the fall detection method, this paper uses the threshold method combined with pattern recognition method to detect falls. The thresholding method uses the head fall speed and the body tilt angle. The tilt angle of the upper body is used to solve the bending and squatting errors. The pattern recognition method transforms fall detection into two classification problems, fall and no-fall, and uses a support vector machine binary classification method combined with a directed gradient histogram to extract features from skeletal images for classification. The final experimental data show that this paper implements fall detection based on human posture estimation using Azure Kinect DK depth camera with high accuracy and practicality.*

Keywords: computer vision, pose estimation, fall detection. Azure Kinect DK, openpose

1. Introduction

Humans use their eyes to see the forms of all things. For machines, the most effective way to "see" the world is to use "eyes". Now, people have made various digital cameras, video cameras, infrared surveillance, and depth cameras. and other equipment, the machine has "eyes", and due to the substantial improvement of computer computing power, using the computer as the "brain" of the machine to process the captured images or pictures has developed into an independent field of artificial intelligence (AI). - Computer Vision.