

## Exploring Instructional Leadership Practises Items Among Headmasters in Public Primary Schools: An Exploratory Factor Analysis

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### ABSTRACT

As stated in most of the instructional leadership literature, school leadership affects teacher learning. The concept of instructional leadership has evolved through school effectiveness around the 1980s and considers school leaders important in promoting teacher knowledge to student learning. However, instructional leadership cannot be implemented to the maximum due to constraints of practising the function of instructional leadership, lack of practice and unpreparedness in carrying out their role as instructional leaders. This study aims to validate an instructional leadership instrument utilising exploratory factor analysis (EFA). The questionnaire used in this study was modified from Hallinger and Murphy's (1985) study. There were 137 teachers from public primary schools who replied, representing all subjects and levels. Respondents at schools were chosen based on clustered random sampling. The results of the EFA indicated three components of instructional leadership: 1) defines the mission, 2) manages the instructional program, and 3) promotes the school climate. Clearly, the three components explained 66.164% of the total variance explained. Note that Bartlett's Test of Sphericity is highly significant (sig. 000), and the sampling adequacy (Kaiser-Meyer-Olkin (KMO)=0.934) is excellent. Other than that, the three components have Cronbach's Alpha values greater than 0.7, significant addition to measuring instructional leadership, particularly in the Malaysian context. The EFA results generated a configuration that extracts three components, which may be measured by 42 items established in this research, indicating that the elements apply to this study.

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### KEYWORDS:

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Instructional Programme  
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**Contribution/Originality:** This study contributes to the Malaysian educational context's adaptation of Instructional Leadership by Halliger and Murphy (1985). The results show that setting school goals, managing instructional programmes and

promoting school climate are crucial elements that might define the role of instructional leadership in a school. Overall, the study's findings highlight the need for educational leaders to play a proactive role in facilitating instructional improvement and cultivating a culture of continuous learning in schools.

## 1. Introduction

Three decades of research have emphasised the importance of instructional leadership in the effectiveness and improvement of schools (Mestry et al., 2013; Salo et al., 2015). Since the early 1980s, leadership studies have changed from an emphasis on general leadership to a focus on specialised styles of leadership (Lai et al., 2017; Pan et al., 2015). One of these is instructional leadership, which focuses on promoting best practices, such as evaluation and improvement in teaching (Ng et al., 2015; Pan et al., 2015; Robinson et al., 2008; Salo et al., 2015). The role of school leaders as instructional leaders in ensuring school excellence is relevant and officially documented in the Malaysian Education Blueprint 2013-2025 (Abdul Rahim et al., 2020).

Instructional leadership is defined as leaders' initiatives and efforts to improve student learning progress. For example, this includes constructing a school vision, channelling resources to implement learning, implementing teacher supervision and evaluation, organising staff development programmes, and fostering teacher relationships and collaboration (De Bevoise, 1984). The same may be said for Glasman (1984) simple definition: an endeavour by school leaders to foster and build a school culture that emphasises instructional practises that can increase student academic achievement. Although different studies define instructional leadership differently (Hallinger, 2003; Qian et al., 2017; Robinson et al., 2008), it is generally defined as a leadership function that supports teaching. It can be done by creating a learning environment with minimal disruption and high expectations for teachers and students (Anderson, 2008; Hallinger & Murphy, 2013; Hattie, 2009; Murphy, 1988; Neumerski, 2013).

With the rise of educational reforms worldwide in the twentieth century and increased awareness of school effectiveness and standards-based accountability systems, instructional leadership garners increased attention (Hallinger & Walker, 2017; Hou et al., 2019; Pan et al., 2015). It also had a high empirical effect on teaching outcomes across all leadership types (Hallinger & Wang, 2015; Zheng et al., 2017). According to Robinson and colleagues' meta-analysis study, the effect of instructional leadership is three to four times the influence on learning outcomes (Robinson et al., 2008). Apart from that, studies on instructional leadership have a positive effect on school improvement and student accomplishment (Hallinger, 2013; Park & Ham, 2014). According to Gibbs (2015), altering teachers' minds to accept change and making the school an organisation that leads teaching cannot happen without effective instructional leaders. This is because the responsibility of school leaders has shifted from simply administering the school to encouraging learning (Kim & Lee, 2020), ensuring learning quality (Gibbs, 2015), and providing professional development and learning opportunities for all teachers (Jameela Bibi Abdullah et al., 2020; Kalaichelvi & Aida Hanim, 2020).

Although instructional leadership is crucial in the school organisation, it is observed that leadership cannot be implemented to the maximum due to the constraints of practising the function of instructional leadership (Mohd Yusri & Wan Ismail, 2015). This is

because school leadership is tasked with responsibilities, expectations and workloads, making the leadership more complex and unmanageable (Pollock et al., 2015; Winemiller, 2019). On the other hand, Pollock et al. (2015) and Abdul Rahim et al. (2020) summarise that school leadership spends a lot of time with school management and administration, budget, and internal and external school management. However, school leadership only pays little attention to coordinating the curriculum subject to the national curriculum (Hallinger & Walker, 2017). In addition, the lack of instructional leadership practices is due to leadership experiencing pressure on personal responsibility and accountability for school performance (Harris et al., 2017). Hence, they rarely take responsibility for leading learning. This causes them to be unprepared to carry out their role as instructional leaders (Al-Mahdy et al., 2018) and often assign the responsibility of school instructional leadership to other parties (Hallinger & Walker, 2017).

Hallinger et al. (2018) discovered 120 research in Malaysia utilised the Principal Instructional Management Rating Scale (PIMRS) as a data collection instrument. Note that 90% of which were done since 1985 describe this tool as a wide-angle lens for assessing leadership's contribution to teaching improvements. According to Siti Noor Ismail et al. (2018), despite its age, PIMRS is still used since validation studies revealed that it meets high-reliability standards. PIMRS has three domains which are 1) defining school goals, 2) managing instructional programs and 3) promoting school climate (Hallinger & Murphy, 1985).

This study aims to study the variable involved in instructional leadership by validating an instructional leadership instrument using EFA. This instrument can then be applied for further research to fill the instructional leadership gap.

### 1.1. Objective

This research aims to investigate and determine the factor structure of an instrument developed by the researcher to assess instructional leaders' practises concerning teaching teachers' competence in public primary schools. The study's specific objectives are as follows:

- i. To assess the appropriateness and interpretability of the items measuring the constructs of instructional leadership practises; and
- ii. To evaluate the reliability and validity of instructional leaders' practises in teaching teachers' competence in public primary schools.

Malaysian Education Blueprint 2013-2025 clearly states policies concerning instructional leadership (Ministry of Education Malaysia, 2013). School leaders must understand and practise instructional leadership, and policymakers must consider the study's findings to recognise the need for instructional leadership upskilling.

## 2. Literature Review

### 2.1. Defining the School Mission

The first dimension, defining the school mission, refers to school leaders who are seen as needing to ensure school staff cooperation in sharing a clear school mission and translating that mission into reality (Bennis & Nanus, 1985). McEwan (1998) defines goals as leaders' visions of the future based on beliefs, experiences, and values. Meanwhile, Schwahn and Spady (1998) and Johnson (2006) define goals as a clear and

concrete picture of the organisation's achievements and the ability to translate goals into reality. [Hallinger and Wang \(2015\)](#) and [Abdul Rahim et al. \(2020\)](#) stated that leaders must focus on a clear mission and goal with the support and collaboration of teachers because it can affect learning and the quality of teaching in schools. It is also the leader's role to define and communicate the school's goals. This serves as the foundation for the school's aims and provides a clear understanding that is widely supported by all school members ([Ghavifekr et al., 2019](#); [Hallinger & Hosseingholizadeh, 2020](#)). Based on the discussion above, formulating and communicating school goals is an essential function under the domain of instructional leadership based on the literature review and previous studies.

## 2.2. Managing Instructional Programmes

The second dimension is managing instructional programmes, which refers to instructional leadership's actions and focuses on developing, coordinating, and monitoring curriculum and teaching matters ([Hallinger et al., 2017](#); [Hallinger & Hosseingholizadeh, 2020](#); [Hallinger & Murphy, 1985](#)). [Gawlik \(2018\)](#) defines this second dimension by including three responsibilities: supervising and evaluating instruction, coordinating the curriculum, and monitoring student progress. As a result, instructional leadership should be involved in organising and developing teaching quality, monitoring student achievement, and making adjustments to promote success. In addition, this dimension's instructional leadership function emphasises using feedback to build the teacher's instructional capacity ([Hallinger & Hosseingholizadeh, 2020](#)). Consequently, instructional leaders must be informed about teaching, committed to school development, and accountable for providing effective feedback ([Hallinger & Walker, 2017](#); [Hallinger & Wang, 2015](#); [Ng et al., 2015](#)). According to [Roslizam Hassan et al. \(2018\)](#), this is the most challenging work that school leaders must face because curriculum and teaching are the core functions of a school. Therefore, failure to manage the instructional programme efficiently and effectively will lead to a failure to achieve the anticipated results in terms of student academic progress.

Overall, the second dimension, managing the instructional program with three-dimensional functions, namely curriculum coordination, supervising and evaluating instruction and strengthening student progress, is seen as an important dimension and a challenge for the school's instructional leadership in realising the curriculum and teaching as the core of a school.

## 2.3. Promoting School Climate

Promoting school climate is the third dimension. It explains the role of school leaders in motivating and assisting teachers and students in participating in effective school activities ([Hallinger et al., 2017](#)). The third dimension according to [Hallinger \(2011b\)](#), refers to the norms and attitudes of teachers and students that influence the learning process at school. School leaders should directly or indirectly create a school climate to facilitate communication and provide a discussion platform for approaching teachers and students. Similarly, they should create a reward system to increase productivity, establish clear standards that include school expectations, and participate in development programmes for school members in line with the school's mission. Furthermore, leaders must foster a culture of continuous growth and recognition aligning with school goals and procedures ([Hallinger & Murphy, 1985](#); [Hallinger & Walker, 2017](#)). According to [Gawlik \(2018\)](#), instructional leaders always aim to improve

the school climate, believing that a successful climate results from a collaborative concentration and focus on teaching.

In conclusion, the third dimension promotes school climate with six functions complementing the previous two dimensions, which are defining the school's mission and managing the instructional program. The researcher in the study utilises all these dimensions to analyse the level and relationship between other variables.

## 2.4. Theoretical Framework

Several new concepts and theories in educational leadership have emerged over the last 25 years. Among these is instructional leadership, which has been studied extensively (Heck & Hallinger, 1999). In contrast to school administrators' use of leadership models such as situational leadership, trait theory, and contingency, the instructional leadership model focuses explicitly on how leadership implemented by school leadership and teachers leads to better results (Leithwood et al., 2020). Early research on effective schools led to the development of the instructional leadership model in the early 1980s (Hallinger, 2003). According to the study, strict curriculum-focused instruction and instruction from leaders are useful features in teaching students (Edmunds, 1979; Leithwood & Montgomery, 1982). In the 1980s and early 1990s, this model shaped effective leadership thinking and became the preferred model of academic leadership (Hallinger, 1992; Hallinger & Wimpelberg, 1992).

Hallinger and Murphy (1985) developed the most widely used instructional leadership model. This model proposes the instructional leadership construct in three dimensions: defining the school mission, managing the instructional programme, and promoting the school climate. The first dimension, determining goals, must be emphasised. The leader does not determine goals alone but must ensure that the school has a clear mission and communicate it to the staff (Hallinger & Murphy, 1985). The second dimension, managing the instructional programme, focuses on curriculum and teaching coordination and control. This dimension includes three leadership functions: supervising and evaluating instruction, curriculum coordination, and student progress monitoring. This dimension clearly indicates that leaders must be deeply involved in instructional development. However, it should be highlighted that leaders cannot be the only ones involved in instructional development, particularly in large schools. This model demonstrates that the academic core is the responsibility of the school's main leadership (Hallinger & Murphy, 1985). Finally, the third dimension of promoting a positive school learning climate includes several functions: protecting instructional time, promoting professional development, being visible, providing incentives for teachers, and providing incentives for students. This dimension is broad in scope and function, encompassing the role of leadership in creating a learning environment to ensure school effectiveness (Hallinger, 2003).

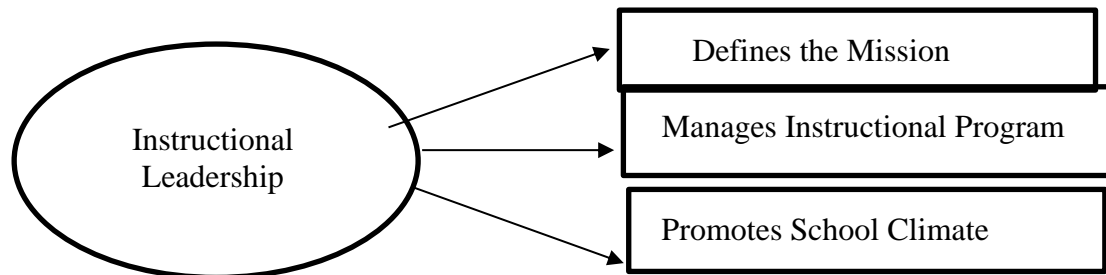
In conclusion, this instructional leadership model was chosen because it coincided with this study, which examines the role of school instructional leadership through the guidance cycle of teachers' teaching competencies. Other than that, this instructional leadership model is a reference in studying the three dimensions involved.

## 2.5. Conceptual Framework

The researcher refers to the study of instructional leadership by Hallinger and Murphy (1985) to determine the domain for the construct of instructional leadership, which is a

further study of the development and the relevance of the PIMRS (Hallinger & Murphy, 1985). As shown in Figure 1, instructional leadership consists of three domains: 1) defines the mission; 2) manages instructional program; and 3) promotes school climate (Hallinger, 2011a, 2011b). Several studies that employed the same domain in their study that supported the choice of this domain were Hallinger dan Walker (2017), Roslizam Hassan et al. (2018), and Thien (2020). In summary, the researcher conducted an adaptive study in the domain of instructional leadership.

Figure 1: The Conceptual Framework of the Instructional Leadership



### 3. Methodology

The description in this section is related to the methodology that relates population and sampling in the pilot study, instrument, factor analysis, and reliability analysis.

#### 3.1. Pilot Study

Previous studies' survey questions were adapted and modified. This study has selected and adapted the instruments developed by Hallinger and Murphy (1985) for their respective fields of study and modified a number of statements to be compatible with the field of study being conducted. Furthermore, two language experts and six content experts reviewed and assessed this study's constructs and study items. Following that, a pilot study was carried out to improve the research instrument's validity and adequacy. A pilot study should be conducted to improve field research quality and efficiency by determining the content validity of instrument items, providing an initial assessment of item consistency, and improving the format and item questions. (Creswell & Creswell, 2018; Sorzano et al., 2017). According to Kline (2015) and Zainuddin Awang (2015), the number of suitable respondents in the pilot study to determine the reliability of the questionnaire instrument is between 25 and 100. To collect quantitative data, the researcher utilised a cross-sectional questionnaire survey. This study collects data on the instructional leadership of public primary schools as it relates to instructional leadership practises using a descriptive method, 137 teachers were chosen at random from 15 public primary schools and given self-administered questionnaires.

#### 3.2. Instrument

The research instruments used were prepared in Malay. Meanwhile, the adapted questionnaire was prepared in English and translated into Malay using back-to-back translations, as suggested by (Son, 2018), based on the requirements and respondents' understanding, values, and local culture. Following that, all the scales in the instrument were adapted from prior research. A self-administered questionnaire containing 59 closed-ended questions (Defines the Mission (DM): 10 items; Manages Instructional Program (IP): 22 items; Promotes School Climate (SC): 27 items). To gather instructional

leadership practises in public primary schools toward teacher teaching competency, all questionnaires used a 5-point interval scale Likert questions ranging from "1 = Strongly Disagree" to "5 = Strongly Agree."

### 3.3. Factor Analysis

This study employed factor analysis to create a valid component and suggest the best elements for each component (Sekaran & Bougie, 2016). Using the pilot result, the researcher decided to perform EFA on the items that measure each construct. According to Zainuddin Awang (2015), if a researcher adapts previous researchers' instruments and modifies statements into new items, they must perform the EFA procedure. This is especially important when the current field of study differs significantly from the previous field in which the instrument was built and validated, especially when there are differences in population, culture, languages, or time lapses. The previous result may have differed and may no longer be appropriate for the current environment. For this reason, the researcher used Bartlett's test to presume the possibility of factor analysis stability and the Kaiser-Meyer-Olkin (KMO) test to determine sample size adequacy for analysis. Apart from that, Kaiser's criterion (Eigenvalue) has also been used to keep a factor or component with one or more eigenvalues (Kaiser, 1960). Eigenvalues are values assigned to each factor that represent the amount of variance in each item that that factor can explain (Pallant, 2016). Catell's scree test entails plotting each factor's eigenvalue and examining the plot to determine the point at which the curve's shape changes direction and becomes horizontal (Cattell, 1966). Subsequently, the next step was to extract factors using the varimax rotation method, as recommended by Gaskin and Happel (2014), because this method obtains factors based on the correlation between items. The following section summarises the communalities by explaining how much variation exists in each item (Pallant, 2016). Note that IBM-SPSS version 25 was used for the EFA.

### 3.4. Reliability

Hair et al. (2014) refer to the degree to which the variable measures the true value with no error (error-free). Therefore, this step will show higher consistency and reliability if the measurement is repeated. Cronbach's Alpha coefficient is a commonly used test for determining consistency reliability (Chua, 2020; Creswell, 2014). On the other hand, Chua (2020) recommends a Cronbach's Alpha value range of 0.65 to 0.95, which is sufficient.

## 4. Results and Discussion

### 4.1. Instructional Leadership Construct Descriptive Statistics

A questionnaire with 62 items was used to assess the instructional leadership construct with a scale of "1 = Strongly Disagree" to "5 = Strongly Agree." The items of instructional leadership were coded DM1 to SC62. Table 1 displays the descriptive outcome of each item that measures the construct. The mean value for each item ranged from 4.12 to 4.66, with a standard deviation (SD) ranging from 0.492 to 0.966.

Table 1: Descriptive Statistics for Instructional Leadership Items

No	Dimension	Mean	SD
DM1	My headmaster (HM) builds the school's focused academic goals	4.56	.513
DM2	My HM builds school academic goals that can be achieved by teachers.	4.46	.556
DM3	My HM uses needs analysis to get teacher input in building the school's academic goals.	4.40	.587
DM4	My HM uses assessment data to build the school's academic goals.	4.47	.529
DM5	My HM builds school academic goals that are easy for teachers to use in learning objectives.	4.50	.583
DM6	My HM disseminates academic goals to school members effectively.	4.52	.516
DM7	My HM discusses the school's academic goals with teachers informally.	4.17	.862
DM8	My HM discusses the school's academic goals with the current teacher formally (school meeting).	4.60	.492
DM9	My HM ensures that the school's academic goals are displayed in a visible place (for example, the school notice board).	4.38	.632
DM10	My HM publicises the school's academic goals in meetings with students (for example, the school assembly).	4.50	.530
IP11	My HM conducted informal observations in the classroom.	4.35	.753
IP12	My HM ensures that the teacher's teaching objectives are in line with the school's academic goals.	4.56	.540
IP13	My HM discusses with teachers to ensure that their teaching objectives are consistent with the school's academic goals.	4.46	.543
IP14	My HM checks the student's work while evaluating the teacher's teaching in the classroom.	4.48	.557
IP15	My HM explains the teacher's teaching strengths, specifically after supervision.	4.55	.542
IP16	My HM explained the teacher's teaching weaknesses, specifically after supervision.	4.50	.583
IP17	My HM identifies the individual responsible for coordinating the curriculum in the school (for example, GPK/head of the committee/teacher).	4.66	.492
IP18	My HM considers the assessment results in planning the curriculum.	4.58	.552
IP19	My HM ensures that the school's special program objectives are consistent with classroom instruction.	4.55	.527
IP20	My HM monitors the teaching in the classroom to ensure that learning objectives are achieved.	4.58	.537
IP21	My HM assesses the gap between curriculum objectives and actual student achievement.	4.38	.557
IP22	My HM actively participates when planning the curriculum program.	4.58	.537
IP23	My HM actively participates in the selection of curriculum materials.	4.48	.544
IP24	My HM discusses the student's academic progress with the teacher individually.	4.47	.569
IP25	My HM discusses the analysis of academic achievement to identify teachers' teaching strengths.	4.52	.557
IP26	My HM discusses the analysis of academic achievement to identify teachers' teaching weaknesses.	4.47	.583
IP27	My HM uses student assessment data to assess the	4.48	.570

	achievement of the school's academic goals.		
IP28	My HM ensures that student assessment results are distributed at the appointed time.	4.59	.536
IP29	My HM informs the school's academic performance results to teachers in written form (memo or bulletin).	4.40	.624
IP30	My HM informs students of the school's academic performance results.	4.48	.608
IP31	My HM identifies students who need special guidance.	4.55	.568
IP32	My HM develops appropriate programs for students who need guidance.	4.53	.570
SC33	My HM ensures that teaching time is not interrupted by school announcements.	4.47	.595
SC34	My HM ensures that students who come late or skip school can follow the previous learning.	4.35	.613
SC35	My HM visited classrooms to see that instructional time was fully used for teaching.	4.52	.557
SC36	HM and I spend time talking with teachers and students during our free time (for example, break time).	4.49	.596
SC37	My HM visited the classroom to discuss current school issues with teachers and students.	4.35	.671
SC38	My HM gets involved in extracurricular activities.	4.33	.708
SC39	HM becomes a substitute teacher while waiting for the real teacher arrives.	4.12	.966
SC40	My HM appreciates the teachers personally for their achievements.	4.36	.736
SC41	My HM provides opportunities for recognition of professionalism	4.53	.556
SC42	My HM rewards in the form of giving opportunities to teachers to be involved in professional development.	4.46	.582
SC43	My HM shared information related to continuous professional development opportunities for teachers.	4.50	.516
SC44	My HM determines professional development activities in line with the school's academic goals.	4.45	.555
SC45	My HM supports the teacher's application to be involved in the PPB program.	4.52	.557
SC46	My HM regularly shares teaching-related journal articles with teachers.	4.32	.641
SC47	My HM supports teachers in applying the skills acquired during the UN program.	4.47	.530
SC48	My HM ensures that teachers receive appropriate PPB training.	4.45	.542
SC49	My HM invited an outside speaker to give in-service training at the school.	4.42	.603
SC50	My HM gets involved with teachers in teaching improvement activities at school.	4.45	.581
SC51	My HM allocates time for teachers to share information gained from PPB training.	4.49	.530
SC52	My HM sets certain standards for student achievement.	4.44	.592
SC53	My HM encourages teachers to start or end class on time.	4.54	.529
SC54	My HM informs what is expected from students based on different levels of achievement.	4.45	.555
SC55	HM supports teachers in enforcing academic policies (for example, grading, homework, promotion or discipline).	4.53	.543
SC56	My HM recognises excellent students by giving formal awards (for example, certificates or school magazines).	4.55	.555
SC57	My HM held a special ceremony as an appreciation for the	4.40	.658

students.

SC58	My HM recognises student achievement based on their work.	4.48	.557
SC59	My HM contacts parents to inform them of achievements or contributions that have been made by students.	4.34	.624

**4.2. Exploratory Factor Analysis (EFA) Result**

Only 42 of 59 items were recognised in evaluating instructional leadership following an EFA approach and the validity and reliability process. Table 2 displays the KMO and Bartlett's Test of Sphericity for the 42 items instructional leadership construct.

Table 2: KMO and Bartlett's Test for Instructional Leadership

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.934
Bartlett's Test of Sphericity	Approx. Chi-Square	5830.503
	df	861
	Sig.	.000

Table 3 presents three Eigen values greater than one, accounting for 66.164% of the variance in the analysis factor, surpassing 60 percent as the minimum percentage of allowable variance in the analysis factor for the construct to be valid. Three component with a total variance of Component 1 contributed 25.338%, Component 2 contributed 24.690%, and Component 3 contributed 16.135%.

Table 3: Total Variance Explained for the Instructional Leadership

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variant	Cumulative %
2	2.221	5.287	62.847	2.221	5.287	62.847	10.370	24.690	50.029
3	1.393	3.316	66.164	1.393	3.316	66.164	6.777	16.135	66.164

The scree plot for the instructional leadership constructs separates these 42 items into three components (Figure 2). An examination of the scree plot reveals an obvious point of inflation following the third factor.

Correspondingly, the rotated component matrix results for the guidance cycle (Table 4) revealed that 42 items out of 59 have factor loadings greater than 0.5. Therefore, items 7, 8, 9, 11, 29, 35, 40, 41, 43, 45, 47, 49, 51, 55, 56,57, and 58 were deleted because they had a factor loading value of less than 0.5 (Hair et al., 2017). The remaining 42 items are divided into three components (Table 4).

Figure 2: Scree Plot for Instructional Leadership Construct

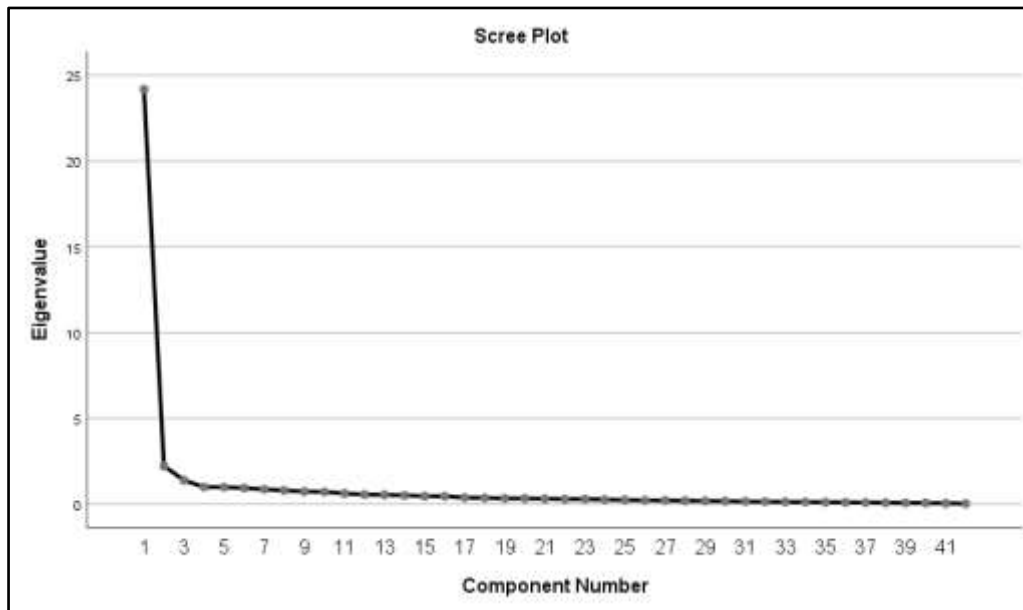


Table 4: Rotated Component Matrix for Instructional Leadership.

Rotated Component Matrix <sup>a</sup>			
	Component		
	1	2	3
DM1			.680
DM2			.841
DM3			.711
DM4			.752
DM5			.712
DM6			.756
DM7 Deleted Items			
DM8 Deleted Items			
DM9 Deleted Items			
DM10			.562
IP11 Deleted Items			
IP12		.559	
IP13		.688	
IP14		.626	
IP15		.750	
IP16		.646	
IP17		.660	
IP18		.723	
IP19		.692	
IP20		.684	
IP21	.519	.535	
IP22		.513	
IP23	.548		

IP24	.536	.561
IP25		.703
IP26		.618
IP27		.656
IP28		.652
IP29 Deleted Items		
IP30.	.546	
IP31	.584	
IP32	.666	
SC33	.711	
SC34	.657	
SC35 Deleted Items		
SC36	.765	
SC37	.789	
SC38	.691	
SC39	.624	
SC40 Deleted Items		
SC41 Deleted Items		
SC42	.571	
SC43 Deleted Items		
SC44	.587	
SC45 Deleted Items		
SC46	.705	
SC47 Deleted Items		
SC48	.599	.506
SC49 Deleted Items		
SC50	.569	
SC51 Deleted Items		
SC52	.569	.518
SC53	.579	.540
SC54	.695	
SC55 Deleted Items		
SC56 Deleted Items		
SC57 Deleted Items		
SC58 Deleted Items		
SC59	.533	

Subsequently, for the communalities result, as many as 42 items of instructional leadership retained in the pilot study questionnaire have an extraction value exceeding 0.3 (Table 5). Hence, they are proven to be valid for use (Pallant, 2016).

Table 5: Communalities for Instructional Leadership

Communalities		
	Initial	Extraction
DM1	1.000	.622
DM2	1.000	.787
DM3	1.000	.723

DM4	1.000	.716
DM5	1.000	.701
DM6	1.000	.751
DM10	1.000	.461
IP12	1.000	.573
IP13	1.000	.760
IP14	1.000	.656
IP15	1.000	.748
IP16	1.000	.574
IP17	1.000	.586
IP18	1.000	.757
IP19	1.000	.747
IP20	1.000	.723
IP21	1.000	.665
IP22	1.000	.612
IP23	1.000	.617
IP24	1.000	.658
IP25	1.000	.820
IP26	1.000	.668
IP27	1.000	.701
IP28	1.000	.682
IP 30	1.000	.473
IP31	1.000	.563
IP32	1.000	.692
SC33	1.000	.664
SC34	1.000	.581
SC36	1.000	.665
SC37	1.000	.694
SC38	1.000	.654
SC39	1.000	.537
SC42	1.000	.616
SC44	1.000	.740
SC46	1.000	.645
SC48	1.000	.651
SC50	1.000	.681
SC52	1.000	.690
SC53	1.000	.701
SC54	1.000	.759
SC59	1.000	.473

### 4.3. Analysis of Reliability in Instructional Leadership

Table 6 represents the final test, in which the reliability estimates for the underlying constructs of instructional leadership implementation. The reliability index ranges from 0.921 to 0.970, indicating that all the items in this construct are highly plausible and acceptable. Overall, the 42 items utilised to assess instructional leadership have a reliability value of 0.948, indicating that they are excellent for measuring the construct.

Table 6: Reliability Analysis for Instructional Leadership

Construct	Sub-construct	Number of Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items
Instructional	Defines the Mission (DM)	7	.921	.922

Leadership	Manages Instructional Programme (IP)	20	.970	.970
	Promotes School Climate (SC)	15	.953	.958
Total		42	.948	0.95

## 5. Discussion and Conclusion

The three-factor structure of the instrument for instructional leadership practises explained 66.164% of the variance in the relationship pattern between items. According to our EFA, Component 1 contributes 25.338%, Component 2 contributes 24.690%, and Component 3 contributes 16.135%. Hence, all three component factors are extremely reliable (all Cronbach's  $> .7$ ). There are 42 instructional leadership practises in total: DM (7 items), IP (20 items), and SC (15 items). As a result of this study, the three-factor structure of the instructional leadership practises instrument was confirmed.

Furthermore, the data included in this study has been confirmed to be suitable for conducting valid EFA based on descriptive statistical analysis. According to [Kline \(2016\)](#), a sample size of 137 students is sufficient for EFA to be conducted. Therefore, the appropriate number of respondents in a pilot study utilising EFA to determine the reliability of the questionnaire instrument is between 25 and 100.

The rotated component matrix results for the instructional leadership construct revealed that 42 items out of 59 have factor loadings greater than 0.5. Items 7, 8, 9, 11, 29, 35, 40, 41, 43, 45, 47, 49, 51, 55, 56, 57, and 58 are among the 17 with factor loading values less than 0.5. The remaining 42 items are divided into three categories. However, four items from the component: IP have attempted to enter the component SC based on the results rotated component matrix, which are IP23, IP30, IP31, and IP32. According to respondents' understanding of instructional leadership practises in Malaysia, these four items are more inclined to the SC component.

This study examines the instrument's reliability and validity during the first phase of the instrument development process. Based on the EFA results of this study, educators or administrators can apply these instructional leadership practices as a tool to study. This is to observe the understanding and level of instructional leadership ability of HMs for public primary schools in measuring and implementing the three components of instructional leadership, namely DM, IP, and SC.

Other than that, this instrument can provide instructional leadership with a greater understanding of the level of instructional leadership practice in schools. This makes them more sensitive and prepared to carry out their responsibilities by attending training to help improve their ability. Instructional leaders must improve their knowledge and skills to contribute to developing a positive school culture that promotes open communication channels, trust, cooperation, and a higher level of readiness for change. Moreover, instructional leadership necessitates adequate training before being appointed and throughout their service, particularly during the first three years. International research also indicates that this period is critical in developing leadership style and instructional leadership skills. However, more research is required to investigate the relationship between latent and manifest variables using confirmatory factor analysis (CFA).

## 6. Limitations and Recommendations

First, this study only includes respondents from national schools. No respondents are from national high schools, private schools, or international primary schools. Second, this study employs a quantitative research approach by distributing a questionnaire to the participants. Third, the teachers who participated in this study were randomly chosen from schools in Negeri Sembilan. Nonetheless, the sample size from this pilot study is adequate and valid. Fourth, statistical methods to study's construct validity and an instrument are the limitations of the analysis technique in which EFA is utilised. However, EFA alone is insufficient to test the instrument's theoretical foundations. To advance knowledge in this area, CFA should be performed.

It is suggested that future research include respondents from public secondary schools, private primary schools, or international schools. In addition, further research can be conducted employing a qualitative approach, including informant interviews, to obtain more detailed data on instructional leadership practices. Other than that, respondents were also chosen randomly by involving more districts or states for generalisation. Finally, CFA is required for further research to verify theories or hypotheses related to the basic structure of variable groups using structural equation modelling (SEM) (Hair et al., 2017).

## Ethics Approval and Consent to Participate

The researchers used the research ethics Educational Research Application System provided by the Research Ethics Committee of Education Planning and Policy Research Division (EPRD), Ministry of Education Malaysia. All procedures performed in this study involving human participants were conducted in accordance with the ethical standards of the ministry research committee.

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## Conflict of Interest

The authors reported no conflicts of interest for this work and declare that there is no potential conflict of interest with respect to the research, authorship, or publication of this article.

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