The Relationship between Virtual Instructional Leadership and Teaching Competency

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Abstract
Effective instructional leader was identified as a key factor for school effectiveness. School leaders should pay full commitment to improve the quality of teaching and learning in the classroom. This study was conducted to identify the relationship of virtual instructional leadership practices and teaching competency among school teachers. Data were collected through questionnaires from 352 respondents and analyzed using SEM. The result shown all the three dimensions that was suggested for the virtual instructional leadership and teaching competency were significant. Beside that, the finding also shown that virtual instructional leadership contributed significantly toward teaching competency guru (β= 0.427, C.R = 6.758, P = .000). Finally, the study was successfully developed an interactional model between virtual instructional leadership and teaching competency (χ2=1928.732, dk=926, P= <0.05).
Keywords: Instructional Leadership, Virtual Leader, Teaching Competency, And Mobile Technology

1.0   Introduction
In order to achieve developed country status in year 2020, education in Malaysia is facing a daunting challenge. In this context, Ministry of Education (MOE) has taken a proactive initiative by introducing Malaysia Education Blue Print *2013-2015*, a plan that aims to set world-class education quality (Kementerian Pendidikan Malaysia, 2013). In connection to that, instructional leadership needs to be strengthened because it is very important in producing effective schools (Buckner, 2011; Leitherwood & Levin, 2010). Halinger's research (2008 & 2011) summarized that principals play a significant role as effective education leaders in schools.

2.0   Issues in Virtual Instructional Leadership Practice
Instructional leadership only got its recognition in Malaysia after research findings showed that it has a significant relationship with effective schools (Sazali, Rusmini, Abang Hut & Zamri,

2007). However, the debate on the definition of instructional leadership is still going on (Glasman, 1984; Halinger, 1985; Murphy, 1985, Halinger & Murphy, 1985; Bas, 2012). The definition differences have caused different models being developed, resulting in education leadership practice difficulty in total (Yusri & Aziz, 2015). However, Halinger and Murphy's model (1985) is accepted among researchers (Halinger, 2011). Most of them use Principles in Instructional Management Rating Scales (PIMRS), which is by Halinger and Murphy (1985).

In Malaysia, there is yet a specialized model that illustrates instructional leadership behavior that is more suitable and local-education-environment friendly (Mohd Yusri & Wan Abdul Aziz, 2013) includes virtual instructional leadership. Nonetheless, the development of mobile technology, social media apps and web apps, as well as the development in *Advancement Information Technology (AIT)* such as the internet, e-mail and video conferences (Avolio, Dodge & A., 2000; Avolio, Sosik, Kahai & Baker, 2014) can help upgrade traditional education leadership to virtual education leadership practice.

Aside from that, having lots of commitments with administrative duties is today's reality for principals (Bity, Ahmad, Ramle & Sani Ibrahim, 2010; Jamelaa & Jainabeem 2011; Yusri & Aziz, 2013; Suhaimi & Mazlan, 2013). This forces them to be outside of school. This problem also put principals in a bind to practice all education leadership functions holistically (Kementerian Pendidikan Malaysia, 2013).

As an impact, the communication between principals and teachers become more distant, with less discussion and guidance on teaching (Arsaythamby & Komuji, 2013), even though there is a research that demonstrates effective communication ensures organization effectiveness (Mohd Yusri & Aziz, 2013). The same goes in increasing teaching competency. Principals have to interact effectively with teachers by gigving guidance, advice, aid, support and motivation (Ariffin & Robiah, 2002; Sani, Abdul, 2013; Sathiamoorthy, 2012; Supyan, 2014 & T. Teviana, 2011).

3.0   Research Method
Generally, this research aims to see the relationship between virtual instructional leadership and teaching competency. There are a few aspects that are given emphasis which are construct validation in virtual instructional leadership and teaching competency, and the contribution of virtual instructional leadership and teaching competency. Finally, based on the research findings, an interaction virtual instructional leadership and teaching competency model is developed.

4.0   Research Methodology
This quantitative study used a cross-sectional study design which studies the population by measuring samples from a controlled sample (Gay, Mills & Airasian, 2011; Lodico, T., Dean, Spaulding & Voegtle, 2010; Yusri, 2012; Noraini, 2010; Sidek, 2013).

Population and Sample
The target respondents are among all secondary school teachers in Malaysia .The sample were selected by stratified random sampling technique and Krejcie and Morgan's sample size determination formula (1970). The study involved 352 secondary school teachers who are 110 male teachers (31.3%) and 242 female teachers (68%). The majority are bachelor

degree holders, with 292 (83%), followed by master degree holders, 47 (13.4%). The rest are philosophy doctors (PhD) and certificate or diploma holders.

The Measurement Instruments

The data is collected through Halinger and Murphy's Principles in Instructional Management Rating Scales (PIMRS) which is then adapted by Yusri and Wan Aziz (2011) and Yusri (2012) to cater virtual instructional leadership variable. Meanwhile, teacher teaching competency variables uses Hay McBer Measures of Teacher Effectiveness (McBer, 2000).

5.0   Data Analysis

The data were analyzed using Structural Equation Model (SEM) using AMOS 22. Both, endogenous and exogenous constructs were validated by Confirmatory Factor Analysis (CFA). The proposed factors are accepted if the outer loading value is bigger than 0.708 (Hair, 2012). Nevertheless, if the outer loading value is similar or bigger than 0.4, they are accepted only when the Average Variance Extracted (AVE) value reaches the proposed value, which is bigger than 0.5 (Hair, 2012). If the composite reliability value is bigger than 0.708, they are accepted (Hair et al, 2012). The accepted AVE value in convergent validity is bigger than 0.5 (Hair et al, 2012; Zainuddin, 2014). When the CR value is ±1.96 and the significant value is lower than 0.5, it shows that the proposed factors have contributed significantly.

Next, the tested measurement model is verified by using fit indexes x^2 (CMIN), CFI, RMSEA, PCFI and PNFI. The hypothesis model is considered equivalent with the research data when x^2 value is not significant, which is above 0.05 (Chua, 2009; Yusri, 2012; Meyers, Gamst & Guarino, 2013). The RMSEA value is exceptional if it is smaller than 0.08. Still, it is accepted if it is less than 0.1 (Byrne, 2013; Yusri, 2012). This hypothesis model reflects as equivalent when Goodness of Fix Index (GFI) value is higher than 0.90 (Chua, 2009; Meyers, Gamst & Guarino, 2013; Yusri, 2012). PNFI and PCFI fix indexes values are accepted if they are above 0.50 (Meyers, Gamst & Guarino, 2013).

6.0   Acknowledgments

The finding shows that outer loading, composite reliability and AVE values obtained display the proposed items are accepted. Outer loading value for virtual instructional leadership is (OL=0.41-0.98, CR=0.825-0.944, AVE=0.6-0.8). For teaching competency, the value is (OL=0.40-0.84, CR=0.639-, AVE=0.482-0.526). The same goes for the proposed constructs in virtual instructional leadership with (OL=0.628-0.922, CR=0.922, AVE=0.685) and for teaching competency, (OL=0.753-0.960, CR=0.905, AVE=0.757). These finding showed that all dimension and constructs in both variable are accepted. These finding also accepted a new functions in virtual instructional leadership which are mobile technology integration in instructional leadership and community support involvement.

Next, table 1 show the regression weight where indicates all critical ratio (C.R) values exceed ±1.96 value. The C.R value for virtual instructional leadership contribution on teaching competency are (B=0.427, CR=6.758, P=.000). This finding show that virtual instructional leadership contributed significantly on teaching competency. It is similar to the findings that show virtual instructional leadership and teaching competency themselves contributed significantly on the proposed dimension.

Table 1:
Regression weights

			Estimate	S.E.	C.R.	P
Teaching competency	<---	Virtual instructional leadership	0.182	0.027	6.758	***
Monitor students' progress	<---	Virtual instructional leadership	0.422	0.051	8.237	***
Supervises and evaluate instruction	<---	Virtual instructional leadership	0.593	0.045	13.19	***
Communicate the school's goals	<---	Virtual instructional leadership	0.659	0.044	15.02	***
Provides incentives for students	<---	Virtual instructional leadership	0.533	0.041	13.148	***
Provides incentives for teachers	<---	Virtual instructional leadership	0.554	0.042	13.107	***
Community engagement	<---	Virtual instructional leadership	0.572	0.043	13.224	***
Integration of mobile technology	<---	Virtual instructional leadership	1.000	*Reference point*		
Frame the school goals	<---	Virtual instructional leadership	0.469	0.045	10.522	***
Teaching and learning skill	<---	Virtual instructional leadership	0.899	0.089	10.12	***
Communications teachers and pupils	<---	Virtual instructional leadership	1.000	*Reference point*		
Values of teachers profesionalisme	<---	Virtual instructional leadership	0.691	0.071	9.679	***

Finally, figure 1 show that virtual instructional leadership and teaching competency measurement model.
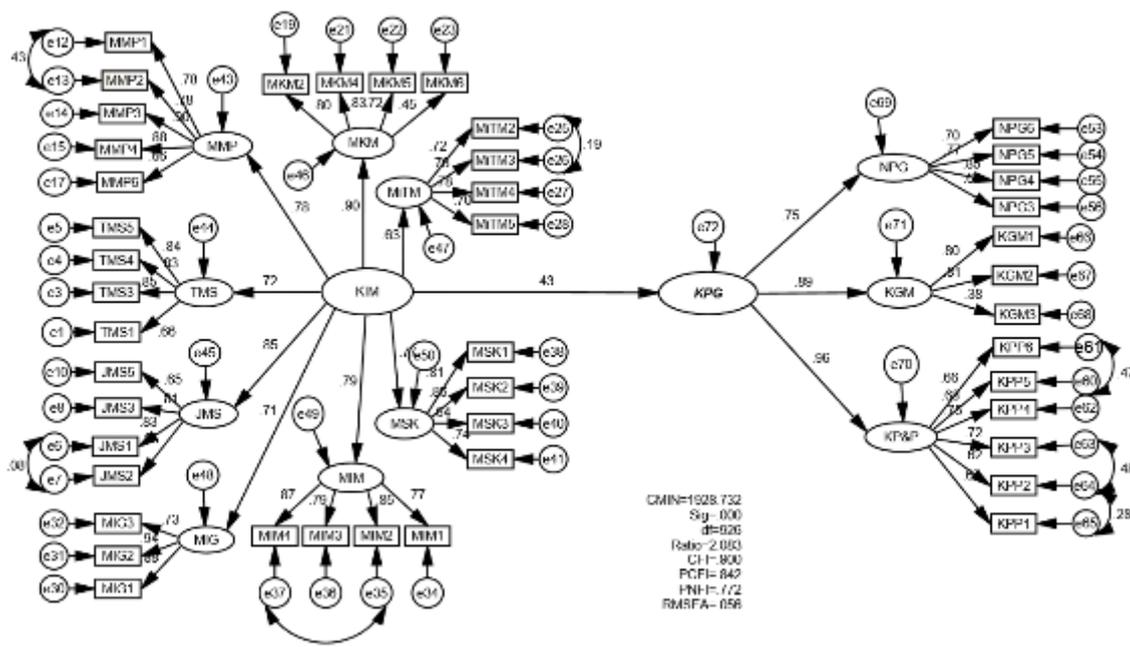
Figure 1: Virtual instructional leadership and teaching competency hypothesis model
In detail, table 2 show all fit indexes to fulfill the needed criteria to validate the proposed model to make it equivalent with the collected data.

Table 2:
Fit indexes

Fit Indexes	Suggested fit indexes value	Hypotesis model
χ^2	-	1928.72
Sig χ^2	>0.05	.000
DF		926
Ratio (CMIN (χ2)/DF)	< 5.0	2.083
RMSEA (Root Mean Square Error of Approximation)	<0.08	0.056
CFI (Comparative Fit Index)	>0.90	.900
IFI (Incremental Fit Index)	>0.90	.901
PCFI (Parsimony Comparative of Fit Index)	>0.50	.842
PNFI (Parsimony Normed Fit Index)	>0.50	.772

According to Hair et al (2010), Joreskog & Sorbom (1984), they stated that in goodness for fit index measurement, at least one from the three fit indexes which are absolute fit, incremental fit and parsimonious fit are achieved, the model is considered fit. The findings show all tested fit indexes are achieved. Thus, the model of virtual instructional leadership and teaching competency in Malaysian secondary school can be validated.

7.0   Discussion and Conclusion
In general, these finding were accepted eight construct in virtual instructional leadership which are frame the school's goals, communicates the school's goals, supervises and evaluates instruction, monitoring students' progress, provides incentives for teachers,

provides incentives for students, promotes professional development, mobile technology integration and community support involvement. These finding also verified and accepted three construct in teaching competency which are teacher profesionalisme values, communication teachers and students, and teaching and learning skill.

Besides, these findings also verified the instructional leadership model by Hallinger and Murphy (1987) that suggested instructional leadership consist of three dimensions which are defines a school mission, manage the instructional program and develops a positive school learning climate. Aside from that, the findings also confirmed two other new functions in virtual instructional leadership, which are mobile technology integration and community support involvement.

Finally, the research successful developed an interaction virtual instructional leadership and teaching competency model. The model contributes significantly on teaching competency. Other than that, CFA results show that all the factors are accepted and verified. In other words, this research is a success in identifying two related elements, and those are principal virtual instructional leadership and teaching competency.

In the context of 21st century education leadership, this research gives an important implication to the country's education system. School leaders are recommended to practice virtual instructional leadership by completely applying all mobile technology facility, social media and network in instructional leadership. This way, instructional leadership function can be practiced anytime and anywhere. Administrative duties are no longer a huge obstacle in applying instructional leadership function holistically. Principals need to arm themselves with the knowledge and skills in information and communications technology (ICT) as virtual instructional leadership is proven in contributing to teaching competency.

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