

Preschool teachers' peer leadership readiness in mobilizing fun innovative inquiry in the New Horizon

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Abstract

The main purpose was to assess preschool teachers' peer leadership readiness in mobilizing 'Fly with virtual Peer-Led Fun Innovative Inquiry' (Fly with v-PeLFII) whilst validating the effectiveness of 'Fly with virtual Peer-Led Fun Innovative Inquiry Model' (Fly with v-PeLFII Model). The 3-point likert scale survey instrument which consists of seven constructs were gathered from 35 preschool teachers who attended the 'Fly with v-PeLFII 21' virtual workshop. Comparative analysis of Pre-Test and Post-Test of 'Fly with v-PeLFII Model' and descriptive statistics were utilized to analyze the data. The increased percentage from Pre-Test to Post-Test within the range of 57.14 percent to 71.43 percent revealed that 35 preschool teachers from Perak are ready to lead their peer teachers in mobilizing fun innovative inquiry in the new horizon. The result also portrayed that the newly developed 'Fly with v-PeLFII Model' was an effective online fun innovative inquiry approach to enhance Malaysian preschool teachers' peer leadership competency in mobilizing the 'Fly with v-PeLFII Model', as well as transforming new ways of delivering interesting and enjoyable instructions in the new horizon. It was also revealed that the combination of various fun innovative inquiry led to various enjoyable hands-on learning activities via virtual and non-virtual interaction platforms. 'Fly with v-PeLFII Model' is also subjected for further validation and assessment locally and globally.

Keywords: Fun, innovative inquiry, peer-led, preschool teachers, virtual.

Introduction

Imagination and innovation are essential inter-connected elements that leads to virtual and physical fun innovative inquiry particularly in preschools environments. Learners at the age of four to six portray high imaginative and creative thinking skills which require the needs for preschool teachers to actively interact and practice fun innovative inquiry in virtual and physical learning environments. Referring to various fun innovative inquiry materials would enhance preschool teachers' peer leadership competency in leading their peers towards mobilizing effective fun innovative inquiry in the world full of volatility, uncertainty, complexity and ambiguity (Yuet, Yusof & Syed Mohamad, 2016). Identifying critical and creative thinking skills, attributes, best practices, as well as cultures for nurturing innovation contribute to innovative capability of individuals and organizations.

In the case of this study, the '*Fly with virtual Peer-Led Fun Innovative Inquiry Model*' (Fly with v-PeLFII Model) was developed to enhance preschool teachers' peer leadership competency and innovative capacity which is essential in the changes of global education ecosystems. In fact, self-directed leadership competency would enhance preschool teachers' professionalism as peer leaders (Fanny & Mansor, 2019). Likewise, '*Fly with v-PeLFII Model*' was developed to enhance peer leadership and innovative capability of individual preschool teachers in conducting fun innovative inquiry through virtual and non-virtual interaction platforms (Yuet, Yusof & Syed Mohamad, 2016). Congruently, leading preschool teachers in practicing industrial revolution 4.0 technologies provides advantages for paradigm shift in instructional practices (Gerekli et al., 2021; Ghouri et al., 2021). In reality, as global education ecosystems change, innovation in instructional practices is critical (Drosos et al., 2021). It should also include risks taking and being flexible to adapt the virtual fun innovative inquiry in the event of future outbreaks, whether through synchronous or asynchronous interactions. Parents or guardians' involvement in virtual learning environments that needs hands-on initiative would attract young learners' attention in using their imagination to accomplish the enjoyable hands-on activities. In fact, parents' or guardians' virtual participation would provide moral support and enhance teachers-learners-parents active engagement (Rudenko et al., 2021; Chmelárová & Čonková, 2021).

In fact, Chokchai and Pupat (2018) reveal that actively engaged young learners in fun inquiry-based learning require learners to think inquisitively and innovatively. Incorporating creative queries into both virtual and physical encounters would also help young learners develop creativity, curiosity, and inquisitive minds. Similarly, preschool teachers should use creativity to conduct hands-on fun innovative inquiry in various interactive surroundings, as this would improve their innovative thinking skills (Batey, 2012). Unfortunately, creating a unique, entertaining, dynamic, and curious atmosphere necessitates preschool teachers working together and brainstorming ideas. Leading peers would also necessitate preschool teachers polishing their inquisitiveness and curiosity (Grazer & Fishman, 2015), resulting in numerous creative thinking talents (Anderson, Potočník, & Zhou, 2014) both within and across processes.

In conjunction, preschool teachers should lead their peers to mobilize fun innovative inquiry and perform as active team members. Peer leaders should apply innovative peer leadership to inspire their peers to think creatively and formulate fresh ideas, new fun instruction alternatives, and new approaches to conduct effective virtual fun innovative inquiry. Experienced peer leaders should work with their peer teachers to actively practice more pleasant, creative, and innovative inquiry (Sailin & Mahmor, 2018). Nonetheless, since the worldwide education ecology has transformed to new horizon as a result of global pandemic, virtual fun innovative inquiry have become increasingly popular. As a result, virtual fun innovative inquiry would be a very good choice to deliver innovative inquiry in a

volatile, uncertain, complex, and ambiguous (VUCA) world. To put it in another perspective, preschool teachers should perform a variety of educational technological approaches particularly in conducting virtual fun innovative inquiry activities. Similarly, preschool teachers should explore a wide range of free digital applications that is applicable in a volatile, uncertain, complex, and ambiguous (VUCA) world. Other options include fully utilizing the '*Fly with virtual Peer-Led Fun Innovative Inquiry Model*' (Fly with v-PeLFII Model), a newly established peer-led fun innovative instructional model for preschools teachers in Malaysia.

The '*Fly with virtual peer-led fun innovative inquiry model*'

The '*Fly with virtual Peer-Led Fun Innovative Inquiry Model*' (Fly with v-PeLFII Model) was developed based on Peer-Led Fun Innovative Inquisitiveness Instructional Model (v-PeLFII Model) and Dobni's innovation theory (Dobni, 2008). Dobni's theory focused on cognitive constructivism (Piaget, 1973) and social constructivism (Vygotsky, 1978), as well as an empirical review of the Community of Inquiry Framework (Garrison, Anderson, & Archer, 2000), Model of Instructional Coaching (Knight, 2004), Community of Practice Model (Bonk, Wisher, & Nigrelli, 2004), Model of Knowledge Sharing (Ho, Wu, & Hsu, 2006), and Model of Appreciative Inquiry (Cooperrider & Whitney, 2001).

To elaborate, the '*Fly with virtual Peer-Led Fun Innovative Inquiry Model*' (Fly with v-PeLFII Model) was designed as significant tool in assisting preschool peers to mobilize v-PeLFII Model to an endless number of preschool teachers in Malaysia and in other country that has similar education ecosystem. It serves as foundation for generating creative ideas among Malaysian preschool teachers, especially in the discovery of viable solutions to inquiry-based challenges which would improve the integration of original idea development and innovative thinking among young learners (Mehtaa, Chandanib & Neerajac, 2014). It also contributes to interactive, motivating, and interesting (Deivam, 2016) as well as active learning and higher-order thinking skills (McLaughlin et al., 2021; Thamrin & Margana, 2019; Retnawati et. al., 2018; Chen & Hu, 2018; McLean, Attardi, Faden, & Goldszmidt, 2016; Yen & Halili, 2015).

'Fly with v-PeLFII Model' is also a flexible model that allows preschool teachers to interact with young learners, as well as their parents or guardians, at times and on schedules that are convenient for both parties. Similarly, preschool teachers may practice shared responsibility with parents or guardians and young learners in achieving virtual fun innovative instructional goals in an easy, flexible and enjoyable manner. Hence, '*Fly with v-PeLFII Model*' was developed based on four underpinning domains highlighted in the v-PeLFII Model which includes '*Leading through Appreciation of Fun Innovative Inquiry*,' '*Leading through Sharing Knowledge and Ideas of Fun Innovative Inquiry*,' '*Leading through Engaging and Fun Innovative Inquiry*,' and '*Leading through Short-Term Goals for Fun Innovative Inquiry*'.

In delivering effective virtual fun innovative inquiry globally in a world full of volatility, uncertainty, complexity, and ambiguity (VUCA), Malaysian preschool teachers should practice their creative and critical thinking skills, analytical skills, synthesis skills, decision-making skills, as well as creative peer leadership skills and digital skills. In other words, creative and innovative preschool peer leaders are expected to lead their peer teachers in reflecting on effective virtual fun innovative inquiry which would have a significant impact on the learning process.

These insights would also help to lay the groundwork for multi-level innovative thinking among public preschool teachers both inside and outside of the classroom. Similarly, innovative public preschool peer leaders would encourage their peer teachers to adopt new ideas for implementing evidence-based innovations and virtual fun innovative inquiry that are

appropriate for the current global pandemic. In other words, in a volatile, uncertain, complex, and ambiguous (VUCA) world, public preschool peer leaders have a significant influence in directing their peer teachers in the study of more innovative and fun innovative inquiry. Nonetheless, in a turbulent, uncertain, complex, and ambiguous global environment, preschool peer leaders and their peer teachers may fail to see how innovative peer leadership and creativity are interwind.

Therefore, Malaysian preschool teachers are urge to mobilize virtual peer-led fun innovative inquiry within and beyond schools closer together. They need to review which skills inhibit creativity that does not drive peer-led innovative leadership into virtual fun innovative inquiry and in contrast, contribute to limitations in young learner's creativity and existing knowledge. The true measure of innovative peer leadership and creativity will highly depend on the effectiveness of the newly developed '*Fly with v-PeLFII Model*' in virtual and physical fun innovative inquiry. Incorporating digital technology and innovative peer leadership into virtual fun innovative inquiry, on the other hand, is a terrific technique to actively engage public preschool teachers, young learners, and parents or guardians throughout the interactive sessions (Mat-jizat, 2013; Mat-jizat et al., 2017). As a result, all public preschool communities must actively participate in the virtual fun innovative inquiry as successful players. Preschools' peer leaders, on the other hand, should continue to lead their peer teachers in implementing a borderless learning network for virtual fun innovative inquiry.

Peer leaders should openly communicate with their peer teachers to mobilize PeLFII Model within and beyond schools. It is also undeniable that not every preschool teacher can generate unique and engaging ideas for innovative and virtual fun innovative inquiry lessons particularly during global epidemic. As a result, preschool teachers in Malaysia need a sustainable reference to conduct novel innovative inquiry such as virtual fun innovative inquiry derived from the proposed virtual Peer-Led Fun Innovative Inquiry (v-PeLFII) Model, which incorporates pedagogical and technological skills acquisition for the next generation instructional spaces (Jaya, Zaharudin & Beram, 2021). Leading preschool peer teachers in conducting virtual fun innovative inquiry would maximize inventive involvement among Malaysian preschool teachers.

Hence, the newly developed '*Fly with virtual Peer-Led Fun Innovative Inquiry Model*' (Fly with v-PeLFII Model) was further validated through the '*Fly with v-PeLFII 21*' virtual workshop conducted for a total of 35 preschool teachers from the states of Perak via Google Meet platform. Indirectly, '*Fly with v-PeLFII Model*' also functions as performance-based assessment model which identifying the level of preschool teachers' peer leadership readiness in performing as peer leaders in the new horizon (Abdullah, Lebar & Abd. Shukor, 2018). Even though fun and innovative play-based learning enhance young learners' motor skills, not all preschool teachers able to equip themselves with ample knowledge on fun innovative inquiry activities. There is also limited Fun Instructional Model focused on fun innovative inquiry published commercially (Suraji et al., 2018). Hence, a sustainable fun innovative inquiry model is needed to sustain preschool teachers' creativity in delivering fun innovative inquiry that lead to play-based activities as well.

In line with this, mobilizing virtual Peer-Led Fun Innovative Inquiry (v-PeLFII) is considered as one of the most challenging paradigms shifts in Malaysian preschools. In other words, preschool teachers should enhance their knowledge in creating ample opportunities on virtual and physical hands-on play-based activities (Andrews, 2019). Virtual and physical hands-on play-based activities are viewed as demonstrable and measurable knowledge, skills and attitudes in mobilizing peer-led fun innovative inquiry amongst preschool teachers in Malaysia (Andrew & Terry, 2014). Likewise, this research aims to identify the level of Malaysian preschool teachers' peer leadership readiness in mobilizing virtual Peer-Led Fun Innovative Inquiry (v-PeLFII) in the new horizon. According to Crowther and his co-

researchers (2002), a new paradigm shift in preschool teachers' instructions should take place in the 21st century learning environment (Crowther et al., 2002). Simply stated, a new paradigm shift in preschool teachers' instructional practices is needed to mobilize peer-led fun innovative inquiry in early childhood education.

Conceptual framework

The conceptual framework in the present study emphasis on the research purposes, objective and the underlying theoretical perspectives which support the research design, assisting the researcher in justifying the research and to successfully achieve the objective of the study Conversely, the objective of the study lies upon the need of early childhood society in having creative, innovative, as well as pedagogical and technological skillful preschool teachers in designing and conducting fun, play-based and inquisitiveness activities virtually and physically in the new horizon. It has been well understood that the new paradigm shift in instructional practices ought to take place in order to comply with the demands of the global changes in educational ecosystem, as well as the continuous upgrading of current stock of knowledge around anticipated skills and innovation needed in teaching Early Science Process Skills among young learners.

Dobni (2008), on his theory of innovation culture, highlights the importance of preschool teachers' intention to innovate fun innovate inquiry and the extend of peer teachers' contributions of the innovation in their respective preschools based on their creativity. Dobni also believes that innovation involve multidimensional context which also include the infrastructure to support innovation the innovative behavior, and the environment for innovation implementation. The environment to foster innovation in this research includes the ability of preschool teachers to perform creative ideas and the processes are co-aligned to changes in the instructional practices from traditional approach to new paradigm shift of innovative inquiry which involves parents and other learning community. The fun innovative inquiry in this research have been highlighted in the newly developed '*Fly with virtual Peer-Led Fun Innovative Inquiry Model*' (Fly with v-PeLFII Model). '*Fly with v-PeLFII Model*' would enhance preschool teachers' creativity in leading their peers on new paradigm shift in teaching Early Science process skills.

Ultimately, the framework was established by integrating Dobni's theory (as the main theory utilized in this study) with the empirical reviews of responsive models. The models consist of the Community of Inquiry Framework (Garrison, Anderson, & Archer, 2000), Model of Instructional Coaching (Knight, 2004), Community of Practice Model (Bonk, Wisner, & Nigrelli, 2004), Model of Knowledge Sharing (Ho, Wu, & Hsu, 2006), and Model of Appreciative Inquiry (Cooperrider & Whitney, 2001). Above all, the framework highlights preschool teachers' peer-leadership competency in leading their peer teachers in mobilizational of fun innovative inquiry (Figure 1).

Since 2000, the Community of Inquiry Framework (Garrison et al., 2000) has been the most widely used approach for cultivating creative inquiry. The Community of Inquiry Framework was intended to promote and sustain innovative inquiry in the transformation of twenty-first-century preschool instructional practices to align with current pandemic scenarios. To date, it has been a highly influential paradigm that has served as the foundation for a variety of innovative inquiry frameworks and models. It is, in particular, a foundational approach for the creation of fun innovative inquiry. Meanwhile, Knight (2004) has created a collaborative, on-site, evidence-based instructional coaching programme for preschool teachers that walks them through the process of implementing fun innovative inquiry, from the initial effective instructional skills to the final innovative practices, with a detailed discussion of effective instructional approaches (Model of Instructional Coaching, 2004).

Congruently, the newly developed '*Fly with v-PeLFII Model*' highlighted four peer-led innovative inquiry domains that would enhance preschool teachers' creativity in delivering fun innovative inquiry. Additionally, preschool peer leaders should have capability to lead their peer teachers and continuously practice the peer leadership culture with learners and parents. Once preschool teachers successfully connected with young learners and parents or guardians, they should collaborate to set short term vision for creative and fun innovative inquiry that would be able to gauge young learners' interest to take part throughout the virtual interactive sessions. Connection with parents or guardians provide opportunities for preschool teachers to guide them on ways to fully utilize the '*Fly with v-PeLFII Model*' for continuous home-based learning to fully utilized the '*Fly with v-PeLFII Model*' as it is an essential peer leadership role in innovation. Individual preschool teachers will be more competitive professionals who are capable to foster teacher innovation culture (Ogunkola, 2013).

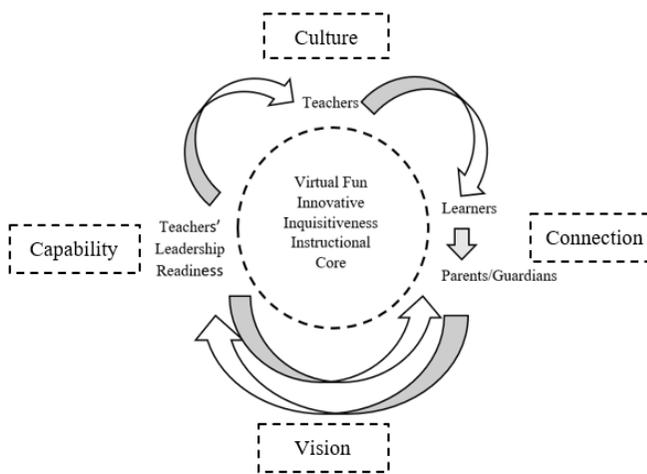


Figure 1. The Virtual Fun Innovative Inquiry Core

Research objective

The aim of this study is to examine preschool teachers' peer leadership readiness in mobilizing virtual peer-led fun innovative inquiry in the new horizon.

Methodology

Research design

This study employed quantitative research in the form of descriptive survey approach. This approach entails the collection of data on variables and is used to assess the existing phenomenon. The data collected enable the researcher to make generalizations of the actual population chosen for the survey (Creswell, 2014). Hence, the main concern in performing the survey approach in the study is to make generalization to the actual population based on appropriate sampling procedures.

Sampling procedures of the study

This study was conducted among preschool teachers in Perak state, Malaysia. The selection of Perak state preschool teachers is to determine the level of preschool teachers' peer leadership readiness on their effort to lead their peer teachers in mobilizing peer-led fun innovative inquiry while piloting the '*Fly with v-PeLFII Model*' in '*Fly with v-PeLFII 21*' virtual workshop. Perak state preschool teachers are fit for this study. The population for preschool teachers in Perak state is 876 (KPM, 2020). Nonetheless, the researchers only chose 25 percent of samples which is equivalent to 219 samples to be involved in the actual study. Nonetheless, for the purpose of pre-testing the effectiveness of the self-developed '*Fly with v-PeLFII Model*', the researchers only chose 16 percent which is equivalent to 35 samples from 35 preschools in Perak. Hence, the researchers employed purposive sampling for the purpose of pre-testing the effectiveness of the self-developed '*Fly with v-PeLFII Model*' which was conducted through the virtual workshop. In other words, 35 preschool teachers were purposely selected as participants for the virtual workshop. 35 participants are sufficient number to conduct a mini survey for the purpose of pre-testing a self-developed model and instrument in this study (Creswell, 2005; Sabitha, 2005; Neuman, 1997, Zatalman & Burger, 1975; Monette, Sullivan, & DeJong, 2002; Boyd, Westfall, & Stasch, 1977). Prior to conduct the virtual workshop in this study, permission was obtained from the Perak State Education Department and the Educational Policy Planning and Research Division (EPRD), Ministry of Education, Malaysia.

Research instrument

The research instrument utilized in the study was self-developed based on '*Fly with v-PeLFII Model*'. The model emphasized on a combination of competency-based approach to peer leadership, innovation skills, pedagogical skills, and technological skills as well, in order to accurately measure the preschool teachers' peer leadership readiness level in mobilizing the '*Fly with v-PeLFII Model*' among peer teachers in Perak state preschools. Likewise, the virtual Peer-Led Readiness in Fun Innovative Inquiry (v-PeLReFII) Instrument also highlighted additional essential skills in innovation such as higher order thinking skills, critical and creative thinking skills as well as planning skills that suits with the present and future learning climates of the next generations (Jaya et al., 2021; Mat-jizat, 2013; Alig-Mielcarek 2003; Amabile et al., 1996).

Crawford (2009) too, had revealed that every teacher should instill innovative skills, innovation knowledge and innovation values in oneself. For instance, teachers who serve as administrators should always be sensitive to changes that foster organizational innovation (Kho, 2020). His view also supported by Horth and Vehar (2014), as well as Cowan (2010) in their study. Thus, the virtual Peer-Led Readiness in Fun Innovative Inquiry (v-PeLReFII) Instrument which consists of 58 items with 7 Peer Leadership Competency and 3-point Likert scale could also be utilized by stakeholders in measuring and assessing administrative effectiveness in managing organizational innovation in the new horizon. The 3-point Likert scale instrument is shown in Table 1.

Table 1. Scale and quantitative description for instrument.

Scale	Quantitative Description
1	Disagree
2	Agree
3	Most Agree

Further, the Peer-Led Readiness in Fun Innovative Inquiry (v-PeLReFII) Instrument was distributed to the 35 participants at the end of the 'Fly with v-PeLFII 21' virtual workshop. The virtual workshop was conducted based on 'Fly with v-PeLFII Model' domains. The domains were mapped with each competency to determine their level of peer leadership readiness in mobilizing the 'Fly with v-PeLFII Model' as shown in Table 2. The subsequent purpose is also to pre-test the effectiveness of the model based on the results shown in Table 3.

Table 2. Mapping of Domain in 'Fly with v-PeLFII Model' to Competency in 'Fly with v-PeLFII 21' virtual workshop

DOM* in 'Fly with v-PeLFII Model'	COM* in 'Fly with v-PeLFII 21' virtual workshop	Mapping of DOM to COM
DOM1: Leading through Appreciation of Fun Innovative Inquiry	COM1: Capable to lead fun innovative inquiry community (DOM2)	DOM2 - COM1
DOM2: Leading through Sharing Knowledge and Ideas of Fun Innovative Inquiry	COM2: Competent to lead peers in setting short-term vision of fun innovative inquiry (DOM1)	DOM4 - COM2
DOM3: Leading through Engaging and Fun Innovative Inquiry	COM3: Capable to lead peers to instill humor into fun innovative inquiry (DOM3)	DOM3 - COM3
DOM4: Leading through Short-Term Innovation Goals for Fun Innovative Inquiry	COM4: Competent to inspire group connection in fun innovative inquiry (DOM2)	DOM2 - COM4
	COM5: Capable to cultivate mind games of fun innovative inquiry (DOM3)	DOM3 - COM5
	COM6: Competent to instill creative fun innovative problem-solving skills (DOM1)	DOM1 - COM6
	COM7: Capable to foster collaborative culture in sharing desirable fun innovative inquiry (DOM2)	DOM2 - COM7

* DOM = Domain; COM = Competency

Pilot testing of research instrument prior to conducting the 'Fly with v-PeLFII 21' virtual workshop

Prior to conducting the 'Fly with v-PeLFII 21' virtual workshop, the virtual Peer-Led Readiness in Fun Innovative Inquiry (v-PeLReFII) Instrument was initially validated by two experts from Institute of Teacher Education Malaysia (for back-to-back translation), two experts in Early Childhood Education from Curriculum Development Centre (for content validation) and one expert from School of Inspectorate and Quality Assurance, Ministry of Education Malaysia (for content validity) respectively. Experts for the back-to-back translation had given positive comments on the language used in each item. Nonetheless, they had proposed for some minor amendment on few words used which might indicate more than

one meaning. In addition, experts for content validity agreed with the 58 items which determine the preschool teachers' peer leadership readiness in mobilizing the virtual Peer-Led Readiness in Fun Innovative Inquiry in the new horizon. Nevertheless, they had also highlighted a few grammatical errors which need to be amended prior to peer leadership readiness highlighted in the survey.

Further, the pilot study was conducted in the same state as the actual study. However, the researchers chose 45 preschool teachers as samples for pilot study. The 45 samples will be excluded in the actual study. The pilot study data was analyzed using SPSS Software. The data of the pilot study was analyzed using SPSS Software. The output value portrayed good reliability index of .899. The value indicates reliability of the v-PeLReFII Instrument. Hence, v-PeLReFII is a reliable instrument to determine preschool teachers' peer leadership readiness in leading their peer teachers to conduct effective fun innovative inquiry through virtual and non-virtual interaction platforms.

Pre-testing of the 'Fly with v-PeLFII model' effectiveness in 'Fly with v-PeLFII 21' virtual workshop

Participants for the 'Fly with v-PeLFII 21' virtual workshop were purposively selected with the purpose to pre-testing the effectiveness of the 'Fly with v-PeLFII Model'. Basically, 35 preschool teachers were selected as the virtual workshop participants. They are inclusive of 22 females, which is similar to 62.86 percent and 37.14 percent for 13 male's preschool teachers from the Perak state preschools. All the 35 preschool teachers were purposively chosen based on their teaching experiences in preschools, which is above 3 years and having more than one preschool in their respective schools.

Every participant (preschool teacher) in 'Fly with v-PeLFII 21' virtual workshop is required to take part in each activity to determine one peer leadership readiness in practicing the fun innovative inquiry as per highlighted in 'Fly with v-PeLFII Model' whilst leading their peer teachers through virtual and non-virtual interaction platforms. As a matter of fact, each participant peer leadership readiness is determine based on each competency that has been mapped with each domain in 'Fly with v-PeLFII Model' (Table 2). The participants peer leadership competency indicates their level of readiness, motivation and commitment to practice and mobilize the fun innovative inquiry to their peer teachers within and beyond the schools. Table 3 shows their readiness to lead their peer teachers to practice the fun innovative inquiry in their respective preschools regardless of delivery mode chosen or preferred either by synchronous, asynchronous or through non-virtual interaction platforms.

The pre-test of the first Peer Leadership Readiness Construct highlighted in Table 3 shows 25 (71.43 percent) of preschool teachers in Perak state 'disagree' upon their peer leadership competency in leading fun innovative inquiry within the innovative preschool teachers' community. In contrast, none of the preschool teachers in the post-test 'disagree' or denied their capability to lead community of innovative preschool teachers regardless of preferred delivery mode. In other words, all the 35 preschool teachers are ready to lead community of innovative teachers in virtual and physical fun innovative inquiry. However, there are 3 (8.57 percent) preschool teachers who 'agree' upon their leadership readiness to lead community of innovative preschool teachers based on the global changes of education ecosystem which is similar in post-test. The percentage of preschool teachers who are ready to lead community of innovative preschool teachers shows an increase of 91.43 percent as compared to 20.00 percent in pre-test. Specifically, the overall increment of 71.43 percent had proven that 25 out of 35 preschool teachers are ready to lead community of innovative preschool teachers to conduct effective fun innovative inquiry based on the current changes of global education ecosystem.

The pre-test for the second Peer Leadership Readiness Construct shows only 8 (22.86 percent) preschool teachers are not ready to set short term vision of fun innovative inquiry. Nonetheless, after attended the '*Fly with v-PeLFII 21*' virtual workshop, the percentage increased to 85.71 percent. These output shows that the '*Fly with v-PeLFII 21*' virtual workshop was effectively conducted to develop 35 peer leaders from the 35 preschools in setting short-term vision of fun innovative inquiry to be achieved within the specified time frame. Overall, there are 22 (62.86 percent) preschool teachers had gained confident to lead their peers in setting short-term vision of fun innovative inquiry after attending the '*Fly with v-PeLFII 21*' virtual workshop. Meanwhile, a total of 6 items had been highlighted in the third Peer Leadership Readiness Construct. The pre-test result shows 25 (71.43 percent) preschool teachers claimed they are not ready to lead their peer teachers on ways to instill humor into their digital classrooms as compared to 4 (11.43 percent) preschool teachers in the post-test. Having successfully instill humor into the fun innovative inquiry would arouse interest among young learners, as well as their parents or guardians to take part in the interactive sessions actively and consistently. Nonetheless, there are only 2 (5.71 percent) preschool teachers in the pre-test revealed they are ready to lead their peers in instilling humor into fun innovative inquiry, as compared to 3 (8.57 percent) of them in the post test. In general, a total of 28 (80.00 percent) preschool teachers claimed they are ready to lead their peer teachers on strategies to instill humor into fun innovative inquiry.

The overall percentage has also increased by 57.14 percent which reveal additional of 20 preschool teachers are ready to lead their peers to instill humor into fun innovative inquiry. Additionally, the pre-test of the fourth Peer Leadership Readiness Construct indicates 27 (77.14 percent) preschool teachers 'disagree' upon their peer leadership readiness to inspire fun innovative inquiry within a small group of preschool teachers as compared to 10 (28.57 percent) preschool teachers in the post-test. However, there are 25 (71.43 percent) preschool teachers in pre-test who 'agree' that they are ready to inspire a small group of preschool teachers to conduct fun innovative inquiry in virtual interaction platforms, as compared to only 1 (2.86 percent) preschool teacher in the post test. The increase percentage by 57.14 percent also indicates the effectiveness of the '*Fly with v-PeLFII Model*' utilized in the virtual workshop. Further, the number of preschool teachers, 10 (28.57 percent) who 'disagree' upon their peer leadership readiness to cultivate fun mind games into their innovative inquiry is higher in the fifth Peer Leadership Readiness Construct, as compared to only 6 (17.14 percent) preschool teachers in the post-test. The increment in the percentage (62.86 percent) and the total number of 22 preschool teachers, too, had proven the effectiveness of '*Fly with v-PeLFII Model*' which serve as an effective mechanism to cultivate fun mind games among preschool teachers which had been greatly emphasized in the virtual workshop. The data in the sixth Peer Leadership Readiness Construct shows 27 (77.14 percent) preschool teachers in the pre-test indicates they are not ready to lead their peer teachers on ways to instill creative fun innovative problem-solving skills, which consists of 5 items into their fun innovative inquiry, as compared to only 5 (14.29 percent) of them in the post-test. In contrast, 3 (8.57 percent) of them in the pre-test indicates they are ready to lead their peer teachers on ways to instill creative fun innovative problem-solving skills into their innovative inquiry, as compared to 24 (68.57 percent) of them in the post-test.

Last but not least, the pre-test data reveals 20 (57.14 percent) preschool teachers are not ready neither to share desirable fun innovative inquiry through virtual interaction nor to lead their peers in desirable fun innovative inquiry, as compared to only 2 of them (5.71 percent) are ready to do so. Nonetheless, there are 6 (17.14 percent) preschool teachers reveal they are ready to lead and to share desirable fun innovative inquiry with their peer teachers. Furthermore, the post-test result shows 29 (82.86 percent) preschool teachers are 'most ready'

to share desirable fun innovative inquiry with their peer teachers, as compared to only 7 (20.00 percent) preschool teachers in the pre-test.

Table 3. Preschool teachers' peer leadership readiness in mobilizing 'Fly with virtual Peer-Led Fun Innovative Inquiry'

Teachers' Peer Leadership Readiness in Mobilizing 'Fly with virtual Peer-Led Fun Innovative Inquiry'	Description	Frequency (n, %)		Percentage Increase (n, %)
		Pre	Post	
1. Capable to lead fun innovative inquiry community	Disagree	25 (71.43%)	0 (0.00%)	25 (71.43%)
	Agree	3 (8.57%)	3 (8.57%)	
	Most Agree	7 (20.00%)	32 (91.43%)	
2. Competent to lead peers in setting short-term vision of fun innovative inquiry	Disagree	26 (74.29%)	3 (8.57%)	22 (62.86%)
	Agree	1 (2.86%)	2 (5.71%)	
	Most Agree	8 (22.86%)	30 (85.71%)	
3. Capable to lead peers to instill humor into fun innovative inquiry	Disagree	25 (71.43%)	4 (11.43%)	20 (57.14%)
	Agree	2 (5.71%)	3 (8.57%)	
	Most Agree	8 (22.86%)	28 (80.00%)	
4. Competent to inspire group connection in fun innovative inquiry	Disagree	27 (77.14%)	0 (0.00%)	20 (57.14%)
	Agree	3 (8.57%)	10 (28.57%)	
	Most Agree	5 (14.29%)	25 (71.43%)	
5. Capable to cultivate mind games of fun innovative inquiry	Disagree	10 (28.47%)	6 (17.14%)	22 (62.86%)
	Agree	19 (54.29%)	1 (2.86%)	
	Most Agree	6 (17.14%)	28 (80.00%)	
6. Competent to instill creative fun innovative problem-solving skills	Disagree	27 (77.14%)	5 (14.29%)	24 (68.57%)
	Agree	3 (8.57%)	1 (2.86%)	
	Most Agree	5 (14.29%)	29 (82.86%)	
7. Capable to foster collaborative culture in sharing desirable fun innovative inquiry	Disagree	20 (57.14%)	0 (0.00%)	22 (62.86%)
	Agree	2 (5.71%)	6 (17.14%)	
	Most Agree	7 (20.00%)	29 (82.86%)	

It signifies preschool teachers' peer leadership readiness to lead their peers in mobilizing 'Fly with v-PeLFII Model' has increased from pre-test to post-test within the range of 57.14 percent to 71.43 percent. The increment of percentage from pre-test to post-test also indicates the effectiveness of the 'Fly with v-PeLFII 21' virtual workshop which was conducted based on the 'Fly with v-PeLFII Model.' Conversely, Malaysian preschool teachers are encouraged to utilize 'Fly with v-PeLFII Model' for effective virtual fun innovative inquiry which provides opportunity for parents or guardians to take part throughout the sessions.

Conclusions and recommendations

Preschool peer leaders are ready to lead their peer teachers in mobilizing 'Fly with virtual Peer-Led Fun Innovative Inquiry Model' (Fly with v-PeLFII Model) in Malaysian preschools. This notion is supported based on the increment of percentage from pre-test (57.14 percent)

to post-test (71.43 percent). PeLFII Model will also contribute to scholarly knowledge and provide a new perspective on peer-led teacher innovation in virtual fun innovative inquiry in early childhood educations, particularly in the planning and inventing of training programs for Malaysian preschool teachers. It would also offer essential tips for practitioners in the development of a Malaysian Early Childhood Educationist Professional Development Model. In the new standards, the newly established '*Fly with v-PeLFII Model*' emphasized the twenty-first-century competences that may be fine-tuned for better efficiency in virtual, blended and hybrid peer-led fun innovative inquiry for preschool teachers particularly in Malaysia educational settings. The proposed '*Fly with v-PeLFII Model*' is also subjected for further validation and assessment locally and globally.

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