



Helping young learners to learn through future learning spaces: Perspectives from stakeholders

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Open Access Research Journal of Multidisciplinary Studies, 2024, 08(02), 056–064

Publication history: Received on 17 September 2024; revised on 05 November 2024; accepted on 08 November 2024

Article DOI: <https://doi.org/10.53022/oarjms.2024.8.2.0063>

Abstract

This study aimed at exploring the future learning spaces of Key Stage 1 (Grades 1-3) learners in the Schools Division of Paranaque City by determining the perception of the different stakeholders in terms of the learners' Gross Motor Skills, Fine Motor Skills, Self-help Skills, Language, Cognitive, and Social-Emotional Skills, Literacy Skills, Numeracy Skills, and Academic Performance. Respondents of the current study were different stakeholders specifically, elementary teachers, school heads and parents. Results of the study revealed that positive impacts were observed as regards the implementation of Future Learning Spaces for young learners. Specifically, positive impacts were demonstrated in terms of fine motor skills, which obtained the highest mean rating; conversely, self-help skills obtained the lowest mean rating. Recommendations, pedagogical implications, and future research directions were provided.

Keywords: Future Learning Spaces; Key Stage 1 Learners; Young learners; Learning Environment; Innovation in Education

1. Introduction

The development of Future Learning Spaces (FLS) has led to the hope that the demands of changing environment are prevalently high, thereby creating many avenues to achieve more collaborative and interactive learning experiences between and among the 21st Century learners and teachers. Spector (2014) elucidated that FLS is defined as learning environments which provide more learning engagement, flexibility, adaptability, effectiveness, efficiency, and reflectiveness of the learning process. Moreover, Singh and Hassan, (2017) amplified that FLSs are associated with technologically-based designed classroom which provides more real-life scenarios in learning and seamless access to information to enhance the learning environment for learners. This should also increase the assessment, feedback, intervention from the teachers. The evolving learning environment does not only limit to the flexible learning, personalized learning, mobile learning, adaptive learning, and blended learning (Cheung et al., 2021). Redesigning FLS can be considered as learning environments that give more focus on learning flexibility, learning engagement, adaptability, effectiveness, efficiency, and reflectiveness of the learning process (Spector, 2014).

In the Philippines, Key Stage 1 (Kindergarten to Grade 3), an entry level in formal education, has an emerging need to make the learning more effective and efficient for the learners. Another important aspect to consider was identified by Aydoğan et al., (2015), they underscored that instructional and emotional support within their learning environment has a big impact for the learning engagement of the children in the class. Barrett & Zhang, (2009), underscored that

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many educational advances show that there is a direct relationship between learning environment and learning outcomes in education. Poor school classroom conditions will lead to difficulties for teachers to deliver the required competencies to their learners. Therefore, there should be efforts to create the ideal learning environment that promotes positive experience for the learners and teachers. This claim was infused in the kindergarten program under the Department of Education (DepEd) which is to provide foundational skills through their engagement in various activities that are more focused on physical, cognitive, emotional, and social development appropriate in their age (P. Alot & Z. Andal, 2023). Early childhood education in the Philippines including the kindergarten program under the Department of Education would want to address the Sustainable Development Goals (SDG) 4 (<https://www.globalgoals.org/goals/4-quality-education/>) Education Goals for inclusive and equitable quality education for all children. According to Bustos-Orosa, 2022, Philippines has a robust legislative framework for providing early childhood development programs such as the Early Years Act of 2013 and Kindergarten Act which is mandated by the country to all academic institutions both public and private schools. The Early Childhood Care and Development Council are the lead group to oversee the Pre-kindergarten (0-4 years old) programs and the Department of Education for the Kindergarten programs (starting 5 years old), both agencies concern is to ensure the quality delivery of early childhood education in the Philippines. Thus, Slotta, (2010) claimed that the use of future in FLSs may also be associated with technologically-based classrooms where learning resources and information are accessible both for learners and teachers in this modern period. Scholars in agreement that classroom of the future promotes higher level of collaboration and innovation amongst learners which is more autonomous and constructivist learning approaches using technology. Furthermore, in this modern era, technology plays a vital role to enable more interactive learning experiences. Future of learning is poised to be more innovative, collaborative, engaging, and student-centered. Therefore, collaborative learning has its purpose of delivering innovation age in the classroom. This idea was emphasized in the sociocultural theory within Vygotsky's zone of proximal development that discusses the scaffolded human learning by external environment (Reiser & Tabak, 2014).

As to the demands of the 21st century education, Schools Division of Paranaque City under the Department of Education and through the collaboration with the City Government of Paranaque, see the importance of establishing FLSs in every public school within the community. This study aims to know the impact of having FLS to the development of basic life skills of the key stage 1 (Kinder to Grade 3) learners and to design plan of actions for establishing more future ready school classrooms. Further, one of the compelling factors to improve the early childhood education in the country is the ASEAN Early Childhood Care, Development and Education (ECCDE) <https://acwc.asean.org/wp-content/uploads/2024/06/ASEAN-Early-Childhood-Care-Development-and-Education-Quality-Standards.pdf> Standards which was ratified in by all ASEAN Members State (AMS) including the Philippines during the Convention on the Rights of the Child (CRC). It has been true to all conditions that formative years in a child's life are crucial in their developmental stage especially their interaction with people and the environment they belong (Preamble ASEAN ECCDE, 2017). Pursuant to the Kindergarten Act 2012 (Republic Act No. 10157) and the Enhanced Basic Education Act of 2013 (Republic Act No. 10533), Department of Education issued DepEd Order no. 47, s. 2016: Omnibus Policy on Kindergarten Education that this program shall be mandatory and compulsory to all five (5)-year old Filipino children to sufficiently prepare them for the next level of formal education in grade one.

The present study is anchored on the perceived notions of different stakeholders as FLS is eventually and gradually implemented the Schools Division of Paranaque City. The researchers would like to investigate the research variables to shed light on the findings of the past studies on FLS, thereby amplifying new dimensions to the constructs of FLS.

A number of researches have been devoted to enriching the constructs of FLS as it is connected with technologically-based classroom; however, few attempts have been made to conduct to determine the perceptions from different educational stakeholders. This study is proposed to determine and explore the connection of basic life skills with the implementation of FLS intended for key stage 1 learners in particular kindergarten learners. Specifically, this study sought to answer the following research questions:

- What is the future learning spaces level of schools as perceived by respondents as to:
 - Gross Motor Skills;
 - Fine Motor Skills;
 - Self-help Skills;
 - Language, Cognitive, and Social-Emotional Skills;
 - Literacy Skills;
 - Numeracy Skills; and,
 - Performance?
- Is there a significant difference among the FLS level of schools as perceived by respondents as to:
 - Gross Motor Skills;

- Fine Motor Skills;
- Self-help Skills;
- Language, Cognitive, and Social-Emotional Skills;
- Literacy Skills;
- Numeracy Skills; and,
- Performance?
- What recommendations are needed to improve future learning spaces (FLS) in schools Division of Paranaque City?

2. Methodology

This study utilized Quantitative-Descriptive Research to know the perception level of assessment by relevant stakeholders on the provisions of future learning spaces in the development of basic life skills of young learners and to design plan of actions for establishing more future ready school classrooms.

Respondents in this study were (3) three administrators/school heads, (29) twenty-nine teachers, and (45) forty-five parents of the three FLS implementing schools in particular Paranaque Elementary School Unit II, Don Galo Elementary School, and Tambo Elementary School Main.

The researchers asked various experts to validate the proposed survey forms on the perceived level of assessment on the established Future Learning Spaces (FLSs) in implementing schools utilized by key stage 1 learners using the rating scale.

The data gathering was conducted through validated online survey utilizing the Google Form app. The respondents were oriented on how to accomplish the survey instrument.

Measures of central tendency were used to get the centrality of the distribution and standard deviation for identifying dispersion. The one-way ANOVA inferential statistics was used to get the significant difference among means.

Data privacy considerations were stated in the first part of the online survey. This would also be a reminder to the participants that all information they will input in the survey would be treated as highly confidential and would only be used in formulating programs that will also benefit the learners as the concerned school implementing FLS. The researchers assure the participants that there was no basic information that would be divulged in public. The results of the survey would only be presented in a summary and graph for proper representation.

An online orientation was conducted thru online meeting platform for the target participants, ALS learners, in the SDO of Paranaque City to explain the nature and purpose of the study, data gathering procedures, and to discuss some ethical concerns pertaining to the information that the participants will be disclosed in this study. This was to ensure that participants would have a clear understanding of the questions they would be answering in the Google Form related to the study. Further, it would give assurance to the participants that all information would be treated with the utmost confidentiality to attain the purpose of this study.

There should be no participants who were compelled to answer the online survey forms in exchange for any favor from the teachers and other concerned personnel. Hence, participation of the respondents was a highly voluntary basis that if they wished to withdraw their participation there will be no negative effect on their respective stations. The researchers may ask for the assistance of various concerned schools/institutions for the provision of technical support to the target participants such as internet connectivity and access to technology. Further, all data were kept in a safe and secured computer system that only the researchers can access to ensure the security of the identity of every participant. Further, the use of an alphanumeric coding system in assigning names of the participants. There would be no conflict of academic interest among teachers, administrators, and parents.

The data from the questionnaires through a Google Form were gathered and an extract from the interviews is now presented and analyzed following the sequence of specific problems that this study wanted to answer. Further, the findings of the study are now presented thematically in the tabular presentation and textual analysis.

2.1. Validation of Research Instrument

Table 1 shows the scale and interpretation on the validity level of the instruments. As seen in the table, there were five validity levels with corresponding scales, which are as follow: Very highly valid with a scale of 5; highly valid with a

scale of 4; Valid with a scale of 3; less valid with a scale of 2; and not valid at all with a scale of 1. Matching interpretations are seen in the table.

Table 1 Validity Level of the Instrument

Scale:	Description	Interpretation
5	Very Highly Valid	The instrument is valid and can provide unbiased data for the investigation allowing only 0 – 5% errors.
4	Highly Valid	The instrument is valid and can provide unbiased data for the investigation allowing only 6% - 10% errors.
3	Valid	The instrument is valid and can provide unbiased data for the investigation allowing only 11% - 15% errors.
2	Less Valid	The instrument is valid and can provide unbiased data for the investigation allowing only 16% - 20% errors.
1	Not valid at all	The instrument is valid and can provide unbiased data for the investigation of more than 21% errors.

Table 2 shows the overall mean scores of the experts on the validity of the research instrument. The validation results in table 2 have been evaluated by the experts in the Schools Division of Paranaque City. These experts include two (2) Public Schools District Supervisors, one (1) Education Program Supervisor in the Kindergarten Program, one (1) master teacher, and one (1) kindergarten teacher. As can be seen from the Table 2, almost all the indicators obtained the validity scores of higher than 4.5 that falls under very highly valid; however, only 1 indicator obtained highly valid score of 4.4. therefore, the research instrument used in this study effective and binding, for it measures what it should be measured. Upon conducting the validation, the experts rated the instrument with an overall weighted mean of 4.66. This score indicated that the instrument is very highly valid, providing accurate measurements for the variables of interest.

Table 2 Validity Level of the Instrument

Indicators	Validity	Interpretation
The indicators in the instrument consistently and accurately measure each variable of the investigation.	4.6	Very Highly Valid
The instrument fits the variables under investigation, thus measuring what it tends to measure.	4.4	Highly Valid
The instrument can measure items of variables within a given time.	4.8	Very Highly Valid
The instrument can distinguish the characteristics, or the allowed data obtained.	4.8	Very Highly Valid
The instrument does not influence the variables being measured.	4.6	Very Highly Valid
The instrument is framed clearly and simply to avoid the risk of errors.	4.8	Very Highly Valid
The instrument can generate data that will be of value and practical use to the sectors concerned in the investigation.	4.6	Very Highly Valid
Overall	4.66	Very Highly Valid

Table 3 exhibits the ranges of level of agreement and its corresponding interpretation which is shown in the table below. The Fliess Kappa was used to assess the level of agreement among five experts in rating certain indicators. The results showed that indicators 1, 2, 5, and 6 had a kappa value of 0.40, indicating moderate agreement. On the other hand, indicators 3, 4, and 7 had a kappa value of 0.60, which corresponds to "good agreement." This suggested that there remained a substantial level of agreement beyond what would be expected by chance.

Table 3 Kappa Inter-Rater Level of Agreement

Range	Interpretation
≤ 0.20	Poor agreement
0.21 – 0.40	Fair agreement
0.41 – 0.60	Moderate agreement
0.61 – 0.80	Good agreement
0.81 – 1.00	Very good agreement

Table 4 Inter-rater Agreement of the Instrument

Indicators	Kappa Value	Interpretation
The indicators in the instrument consistently and accurately measure each variable of the investigation.	0.40	Moderate agreement
The instrument fits the variables under investigation, thus measuring what it tends to measure.	0.40	Moderate agreement
The instrument can measure items of variables within a given time.	0.60	Good agreement
The instrument can distinguish the characteristics, or the allowed data obtained.	0.60	Good agreement
The instrument does not influence the variables being measured.	0.40	Moderate agreement
The instrument is framed clearly and simply to avoid the risk of errors.	0.60	Good agreement
The instrument can generate data that will be of value and practical use to the sectors concerned in the investigation.	0.40	Moderate agreement
Overall	0.49	Moderate agreement

Overall, the indicators showed a moderate level of agreement, with an average kappa value of 0.49. This level of agreement implies that the instrument is reliable and consistent in measuring the variables over time and can accurately distinguish th characteristics or data related to the investigation.

Table 5 shows the total number of respondents and their frequencies per school and their role.

Table 5 Total Number of Respondents

	N
School	73
Role	73

Table 6 Frequencies of School

School	Count	% of Total	Cumulative %
DGES	16	21.9	21.9
PES II	41	56.2	78.1
TESM	16	21.9	100.0

Table 7 Frequencies of Role

Role	Counts	% of Total	Cumulative %
Administrator / Schoolhead	3	4.1 %	4.1 %
Parent	45	61.6 %	65.8 %
Teacher	25	34.2 %	100.0 %

Frequency distributions of the participants were categorized per school and their role. Data shows that the total number of respondents was 73 and PESII got the greatest number of participants since this school initially implemented the FLS with 5 rooms followed by DGES and TESM with the same number of respondents. Among the frequencies of roles, parents got 61,6% of the total number of participants.

3. Results and Discussion

After the establishment of 3 pilot sites of FLS for key stage 1 learners in the division in S.Y. 2023-2024, namely Paranaque Elementary School Unit II, Tambo Elementary School Main, and Don Galo Elementary School, the researchers gathered data using validated survey tools with 4.66 rating which indicate very high validity from the expert validators on the perceived level of assessment of the stakeholders on the FLS and its provisions to develop basic life skills of the learners based on the following categories that is anchored to the Early Childhood Care Development checklists and core competencies in literacy and numeracy skills:

Perceived Level of Assessment on the Established Future Learning Spaces

- Gross Motor Skills

The FLS has enough space for...

- Moving around (e.g. Walking, running, etc.)
- Playing with other classmates (e.g. Basic ball throwing and catching)
- Using leg motor skills (e.g. Jumping, climbing, etc.)
- Employing complex movement skills (e.g. Dancing and other simple body coordination)

- Fine Motor Skills

The FLS has manipulative learning resources that...

- Improve picking, handling, putting small objects, and simple tying skills
- Improve scribbling skills
- Improve drawing and coloring skills
- Improve hand-finger reflexes using learning gadgets

- Self-Help Skills

The FLS has provision to improve their basic skills...

- In feeding themselves on their own.
- In dressing themselves on their own.
- In toilet training and personal hygiene.
- In becoming independent and organized

- Language, Cognitive, and Social-Emotional Skills

The FLS has provision for the development of ...

- Receptive language skills of children.
- Expressive language skills of children.

- Cognitive aspects of the children.
- Social-emotional aspects of the children.

- Literacy Skills

The FLS has provision to improve their basic skills in...

- Speaking
- Listening
- Viewing
- Reading
- Writing

- Numeracy Skills

The FLS has provision to improve their basic skills in...

- Understanding numbers
- Counting numbers
- Adding and subtracting numbers
- Solving number problems and fractions
- Measuring, estimating, sorting, and noticing patterns

- Performance

The FLS has provision for...

- Monitoring the attendance and participation rate of the children.
- Collaborating among children.
- Practicing creativity among children.
- Using auditory and visual skills of the children

Table 8 shows the mean level of FLS implementation based on the perceived level of the respondents according to their role. As can be seen, the data reveal the impressive levels of FLS Implementation in selected schools of DepEd Paranaque City, Philippines. Among the seven indicators, fine motor skills stood out with the

Table 8 Mean Level of FLS Implementation per Category

Indicators	Administrator	Teacher	Parent	Grand Mean
	Mean/Standard Deviation			
A. Gross Motor Skills	4.08 (0.88)	4.46 (0.67)	4.35 (0.76)	4.30
B. Fine Motor Skills	4.67 (0.58)	4.66 (0.67)	4.67 (0.58)	4.67
C. Self-help Skills	3.13 (0.53)	3.53(0.76)	3.34(0.81)	3.33
D. Language, Cognitive, and Socio-Emotional Skills	4.33 (0.53)	4.55 (0.76)	4.17 (1)	4.5
E. Literacy	3.33 (0.58)	4.53 (0.70)	4.18 (0.94)	4.01
F. Numeracy	4.15 (0.58)	4.63 (0.74)	4.2 (0.952)	4.29
G. Performance	4.33 (0.58)	4.56 (0.7)	4.41 (0.82)	4.46
Grand Mean	4.26 (0.87)	4.56 (0.72)	4.27 (0.87)	

highest mean rating of 4.67, signifying excellence and securing the top rank. However, self-help skills received the lowest mean rating of 3.33, indicating the need for improvement and ranking seventh. This insightful analysis is based on feedback from three (3) administrators/school heads, twenty-nine (29) teachers, and forty-five (45) parents.

Table 9 Analysis of Variance (ANOVA)

Sources of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	Computed F-Value
Treatment	-132.522	6	-22.087	-2.304
Error	134.231	14	9.588	

Table 9 indicates the results of analysis of variance (ANOVA) inferential statistics conducted by the researchers. As seen from the table, the data reveal the mean difference among the responses regarding the level of implementation of Future Learning Space (FLS). The computed F-value is -2.304, while the tabular value is 2.85, with a degree of freedom (6,14) at a 0.05 level of significance. Since the computed F-value is less than the tabular value, the null hypothesis is accepted. Therefore, there is no significant difference among the perceived responses on the FLS level of implementation, implying that the responses are correlated with each other. Consequently, they are consistent in saying that the following indicators to be focused on are the self-help skills, literacy skills, numeracy skills.

4. Conclusion

This study is proposed to determine and explore the connection of basic life skills with the implementation of FLS intended for key stage 1 learners in particular kindergarten learners. Specifically, this study sought to answer the following research objectives:

- To perceive the notions of different stakeholders as regards the construct of FLS in terms of the following basic skills of key stage 1 learners such as; Fine Motor Skills; Self-help Skills; Language, Cognitive, and Social-Emotional Skills; Literacy Skills; Numeracy Skills; and, Performance.
- To determine the significant difference among the FLS level of schools as perceived by respondents such as; Fine Motor Skills; Self-help Skills; Language, Cognitive, and Social-Emotional Skills; Literacy Skills; Numeracy Skills; and, Performance.
- To provide recommendations are needed to improve future learning spaces (FLS) in schools Division of Paranaque City.

As far as the notion of different stakeholders are concerned fine motor skills were perceived as exceptionally well with the highest mean rating of 4.67. Because many parent- respondents observed the following in their children holding a pencil and writing or drawing with it; Using scissors; typing on a keyboard; zipping a zipper; tying one's shoes, and twisting a doorknob. On the contrary, self-help skills such as dressing and undressing oneself; feeding oneself; practicing personal hygiene; practicing toileting; doing simple chores; and, following basic safety skills to name a few were less demonstrated. These skills received the lowest mean rating of 3.33, indicating the need for improvement and ranking seventh.

The mean level of responses is consistent, showing no significant difference among the mean levels of FLS. This finding may imply that the implementation as perceived by school heads/school administrators, teachers, and parents seem acceptable. They all agree that there is still a need to revolutionize the FLS in the DepEd-Paranaque City,

Based on the findings and conclusions and anchored to the MATATAG agenda of the Department of Education, here are the course of actions which set the strategic directions of SDO Paranaque City on Future Learning Spaces:

- Contextualize Key Stage 1 Curriculum Delivery and Assessment that promotes; Self-Help Skills; Literacy Skills; and Numeracy Skills
- Create more future learning spaces with technology-integration and facilities that promote holistic development through partnership as support system to DepEd
- Provide inclusive and positive learning environments to produce active and resilient learners through the provision of FLS
- Capacitate Key Stage 1 Teachers on effective utilization of FLS

Helping young learners through future learning spaces requires a multifaceted approach that considers the perspectives of all stakeholders. It's not just about the physical design of classrooms but also about creating adaptable environments that integrate technology, foster creativity, and encourage collaboration. Stakeholders agree that future learning spaces should be flexible, technology-driven, and learner-centered, while also ensuring that these environments promote well-being, inclusivity, and preparedness for the future. This collaborative approach, drawing on insights from educators,

students, parents, designers, and policymakers, is essential in shaping spaces that will meet the evolving needs of young learners in the 21st century.

While the findings of the present study may still be inconclusive as far as the constructs and implementation of FLS in different contexts, more studies seem required to be conducted to validate the findings of the current study on FLS.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest exists among the Authors.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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