

Challenges and Teaching Strategies of Primary School Environmental Education

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Abstract

This research about challenges and teaching strategies of primary school environmental education. The study used a Parallel Mixed Method Design. The research processes data using N Vivo Version 11 and Statistical Package for Social Sciences Version 26 computer software packages. The research used random sampling to select 380 respondents for quantitative research and 25 respondents for qualitative research. The study took as long as 32 weeks at the primary school. The findings of this study show that educators experience challenges or constraints in terms of skills, time, routine, class size, and teaching resources. Next, the findings of this study found that most teachers have a high level of use of teaching strategies. Teachers have a high level of use of teaching and learning strategies in terms of specific actions in teaching about the natural environment, the cultural environment, habitats, and ecosystems. This study has implications for the practice by which educators are creative in carrying out teaching activities.

Keywords: Challenge, Teaching Strategy, Primary School

1. Introduction

1.1 Study Background

This section aims to elaborate on the background of the study. In this regard, the mission of environmental education is to seek human well-being, sustainable economic development along with traditional authenticity, and appreciation for natural resources. This research is related to the educational body of knowledge for the component of educational specialization in science teaching in primary school aspect of environmental education. It is in line with the United Nations Charter, which states that environmental education is a lifelong learning process (United Nations Educational, Scientific and Cultural Organization, UNESCO, 2021).

In this regard, the Ministry of Education implements the application of environmental values through the teaching and learning process, as well as through the active involvement of students in co-curricular activities. O'Keeffe (2020) stated that the involvement of school staff in Green School and Sustainable School activities also provides an opportunity for them to adopt environmentally friendly features. Importantly, this effort is in line with the country's purpose and aspiration to make it a developed country with a society that values the quality of the environment.

1.2 Problem Statement

Next, the purpose of this section is to describe the problem of the study. Ideally, primary school environmental education is cross-curriculum, as there is no mandatory allocation to teach environmental

education subjects in schools. Meanwhile, the Ministry of Education has published the Cross-Curriculum Environmental Education Educator Handbook for schools. This guidebook aims to assist educators in planning and providing education in the environment, on the environment, and for the environment. Thus, educators use the contents of the guidebook by integrating it with the learning objectives of a subject (Scruggs, 2018).

In reality, the current situation regarding primary school environmental education is that there is no assessment of environmental education in tests or exams (Shiva Kumar, 2019). Before that, Smith (2017) found that only a small proportion of educators clearly knew what the science of environmental education was and how educators needed to formally implement in the classroom. As a result, there will be an impact on education and environmental sustainability if this issue is not overcome. According to Gordon (2018), some educators have a negative attitude towards the concept of environmental education because they do not take this aspect seriously. Moreover, Ferguson (2018) states that although the profanity about nature all so present in the souls of educators, their knowledge of the environment is still not enough. Most of the educators are unaware of the lack of knowledge and do not ask for training to be more confident in teaching related subjects in schools (Rossetter, 2018).

As a potential solution proposal to the issues raised in the Gordon (2018), Ferguson (2018), and Rossetter (2018) studies, we as researchers explained the challenges educators face in environmental education. Moreover, researchers also identified what is the level of use of the educator's teaching strategy in primary school environmental education.

1.3 Research Objectives

Furthermore, this section deals with the objectives of this study. At the end of this study, researchers were able to: (1) Identify the challenges educators face in primary school environmental education; (2) Describe the teaching strategies in terms of teaching about the natural environment, teaching on the cultural environment, teaching about habitats, and teaching about ecosystems used by educators in primary school environmental education.

1.4 Research Question

Besides, the purpose of this section is to identify the study questions. In this regard, researchers answer research questions such as the following, namely (1) How are the challenges educators face in environmental education? (2) What is the level of use of the educator's teaching strategy in terms of teaching about the natural environment, teaching on the cultural environment, teaching about habitats, and teaching about ecosystems in primary school environmental education?

1.5 Scope and Limitation of Study

Besides that, this section deals with the limitations of this study, which is about researchers who may encounter various problems throughout the process of collecting the results of the survey from selected respondents. This study involved 380 educators from primary schools in Perak, Malaysia. Therefore, the findings of the study are limited to the views of educators from this area only. With the limitations of this study, researchers should accept the findings carefully. Therefore, researchers need to do further research either to strengthen, support, or not support the findings of this study. Among the difficulties are that there are respondents who do not understand the implementation strategy of environmental education, are not

calibre in this field, lack knowledge, and do not understand the strategy and direction and requirements of environmental education.

1.6 Study Significance

Next, too, this section aims to present the significance of this study. This research is related to the body of knowledge in science teaching in primary school aspect of environmental education. The objective of this study is to assist educators in overcoming challenges or constraints and improving teaching strategies in primary school environmental education. The results of the researchers can make a valuable contribution to the educators, parents, students, school administrators, communities, and government bodies involved in improving the quality of environmental education.

1.7 Operational Definition

Moreover, the purpose of this section is to elaborate the definition of independent variables, i.e., the challenges educators face in environmental education, and dependent variables, i.e., the level of use of teaching and learning strategies that educators use in environmental education.

1.7.1 The Challenges Educators Face in Environmental Education

A challenge or constraint is an element that tests an individual's ability and perseverance. In this study, we as researchers explain the challenges educators face in environmental education by using Observation Techniques. We studied respondents based on the *Observation Checklist*. It has five observation items, namely (1) what are the main constraints that educators face to teaching environmental education? (2) Is there a time constraint to teach environmental education? (3) How is the involvement of school staff and administrators in teaching environmental education? (4) Is there a lack of knowledge and experience? (5) Is there a lack of reference and exposure resources to teach environmental education?

1.7.2 The Level of Use of Teaching Strategies That Educators Use in Environmental Education

According to UNESCO (1977), environmental education has the following characteristics, that is, it is a lifelong process, interdisciplinary and holistic and its application, as well as it is an educational approach as a whole, not a subject. In addition, environmental education is related to the relationship and interconnection between human and natural systems, and it looks at the environment as a whole, including social, political, economic, technological, moral, aesthetic, and spiritual aspects. UNESCO (2021) states that environmental education is a learning process that involves the ability of pupils to solve problems and the ability of students to make decisions. In this study, we as researchers identify the level of use of the educator's teaching strategy in primary school environmental education by using a *Primary School Environmental Education Teaching Strategy Questionnaire Form*.

This instrument aims to obtain the respondent's feedback in terms of his knowledge and skills on the teaching strategy of primary school environmental education. It consists of four strategies, namely (a) Teaching about the natural environment, (b) Teaching on the cultural environment, (c) Teaching about habitats, and (d) Teaching about ecosystems. In this study, researchers used the Five-Point Likert Scale to measure the Very Definite (5), Sure (4), Less Sure (3), Uncertain (2), and Very Uncertain (1) levels.

1.7.3 Primary School Educators

In this study, educators or teachers of environmental education refer to qualified teachers who are teaching in primary schools, that is male and female of various ages, have a wide range of experience as educators or teachers, and have a wide range of academic qualifications and professional qualifications.

2. Literature Review

2.1 Theories and Models Related to the Field of Study and Research

Theoretical Framework

It seems to us evidence that the phenomenon of challenges and strategy phenomena plays a major role in this research, it is an important concept to determine the theoretical framework of the study. Therefore, the appropriate theories and models are the Theory of Challenge and Support (Sanford, 1967) and the Environmental Education Strategy Model (Monroe, Andrews & Biedenweg, 2008).

2.1.1 Challenge and Support Theory (Sanford, 1967)

The Theory of Challenge and Support by Sanford (1967) states that for optimal growth of individual development in an organizational environment, the challenges experienced must be met with support that can tolerate the stress of the challenge itself. The theory has three conditions of development, namely readiness, challenges, and support. Regarding the condition of readiness, it refers to internal processes related to maturity or beneficial environmental factors. This state of readiness can help the growth of the development of the individual if he is physically or psychologically ready.

Otherwise, it can limit the growth of its development. Next, in terms of challenge conditions, it refers to situations where an individual does not have the skills, knowledge, or attitude to overcome them. Finally, in terms of support conditions, it refers to buffers in an environment that helps individuals to successfully meet challenges. This theory speculates that if an individual faces too many challenges, it can deteriorate in its developmental growth and the individual succumbs to the existing challenges. This theory discovers that individuals go through significant personal growth and development, most of which are influenced by the environment, including what happens inside the classroom as well as what happens outside the classroom.

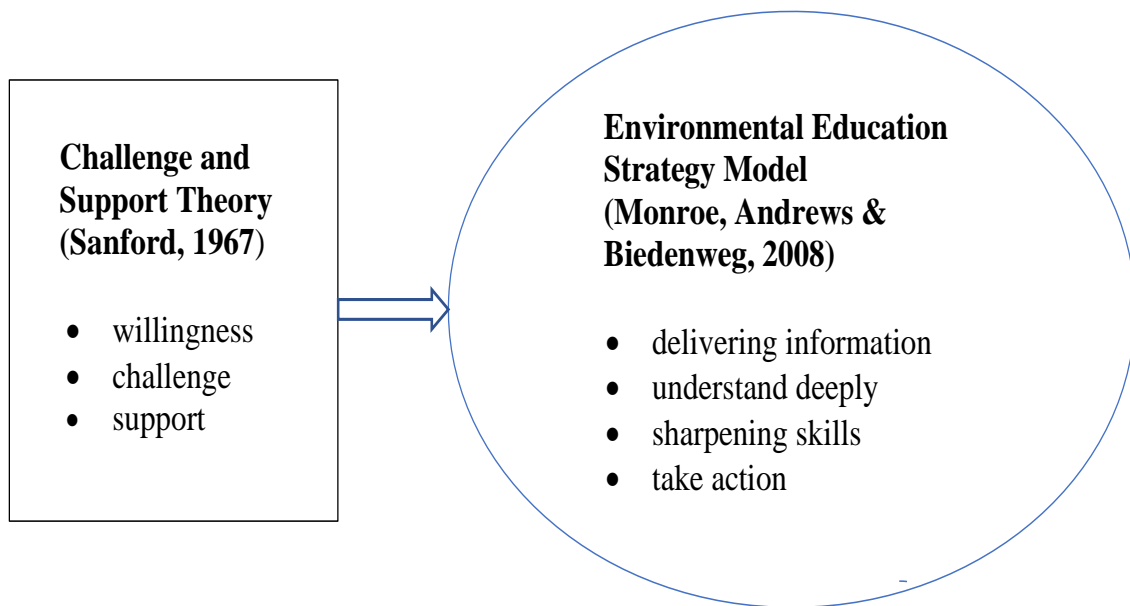
2.1.2 Environmental Education Strategy Model (Monroe, Andrews & Biedenweg, 2008)

The Environmental Education Strategy Model by Monroe, Andrews & Biedenweg (2008) aims to summarize and organize a set of environmental education interventions. This model defines four categories of environmental education according to its purpose, namely conveying information, understanding deeply, honing skills, and acting. In relation to the category of disseminating information, it aims to disseminate information, raise awareness, and inform. Among several formal learning strategies are books, movies/videos, and website information. Further, is the category of understanding in depth, it is intended to exchange ideas and provide dialogue, to build a sense of locality, to clarify and improve the understanding of information and issues, and to raise concerns. Among many formal learning strategies are role-playing, discussion, games, simulation, and field studies.

Next, in relation to the category of honing skills, it aims to build and practice skills. Among various formal learning strategies are experimentation and investigation, monitoring, and folk science. Finally, is the category of acting, it aims to build transformative capabilities for leadership. Among various formal learning strategies are creative problem-solving, monitoring, action projects, problem-solving, monitoring

and detection, creating networks, and sharing information. In this study, the challenges or constraints that educators face in environmental education influence the teaching strategies that educators use in environmental education. We describe these relationships and relevance in Figure 1.

Figure 1: Research Theoretical Framework



2.2 Past Study Related to Study Questions and Research Conceptual Framework

We are teachers of environmental education and are interested in identifying the challenges or constraints that educators face and the teaching strategies that educators use in environmental education. We have read different publications related to environmental education. From here, we can already have an idea of the variables of this study.

2.2.1 Challenges That Educators Face in Environmental Education

The purpose of this section is to discuss the challenges educators face in environmental education. In this regard, Jan-Ole, Matthias, Annie & Eileen (2022) found that personal, professional, social, and structural relationships are the most significant factors influencing learning. To develop pupil empowerment, the frequent recommendation is for leaders of external environmental education programs to provide pupils with a high degree of autonomy through an emancipation approach, by engaging them in the decision-making process. In addition, educators should be eager to familiarize pupils with the topic of environmental health. Furthermore, educators should make their pupils aware of the environmental sustainability implications and then encourage pupils to play their part (Nandhini, 2021).

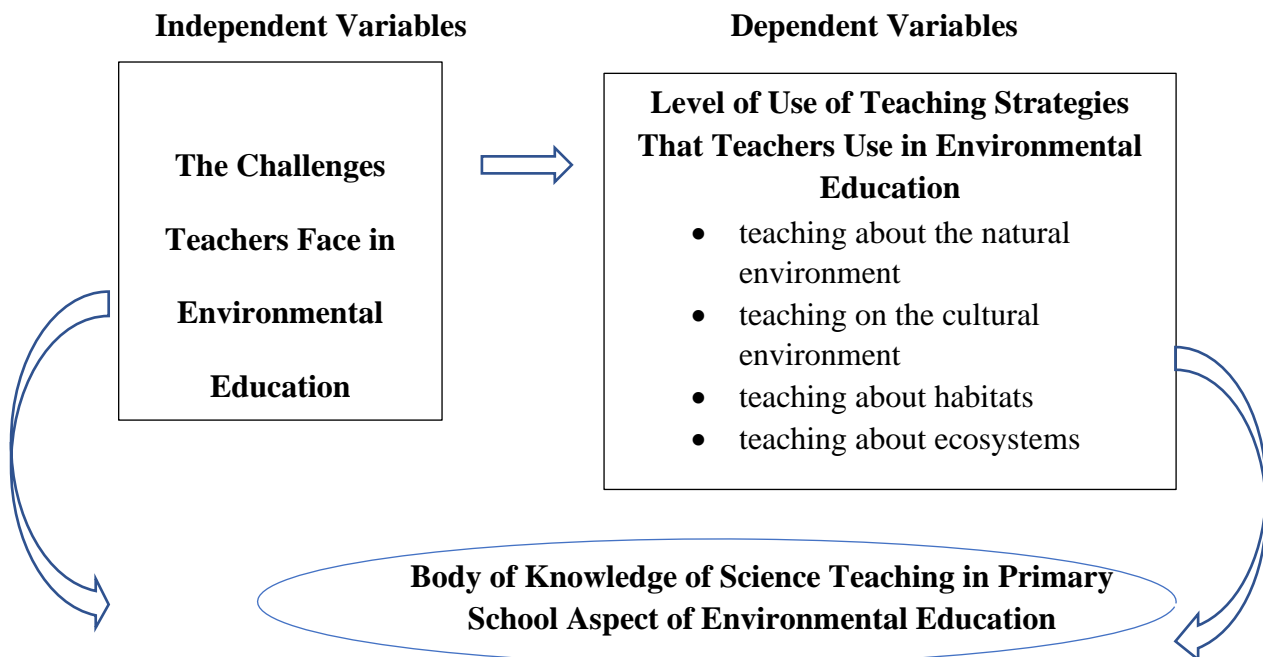
In this regard, Haliza Abdul Rahman (2018) stated that education is a fundamental tool for controlling the environment as well as sustainable development. Additionally, environmental education refers to the planned efforts made to educate the community, either formally or otherwise, so that the well-being and survival of the community and the environment are preserved and sustainable.

2.2.2 The Level of Use of Teaching Strategies That Educators Use in Environmental Education

This section aims to elaborate the level of use of teaching and learning strategies of educators to teach environmental education through the curriculum in learning through approaches, methods, and techniques in the classroom and outside the classroom. Alyssa, Jose & Nelson (2017) states that there is an impact on the pupil that participate in activities in natural areas such as in outdoor camps and in schools. His research shows the impressive impact of nature programs outside of school. Meanwhile, most individuals have a moderate level of environmental education competence in six sections, namely (1) environmental knowledge, (2) a basic understanding of environmental education, (3) responsibility for the actualization of environmental education educators, (4) the planning and handling of environmental education, (5) promoting environmental education learning, and (6) environmental education assessment (Wanchana, Inprom, Rawang & Ayudhya, 2019).

Before that, according to Kasthuri Veratharaju & Sharifah Norhaidah Syed Idros (2018), advances in the field of educational technology such as the use of online games have resulted in various teaching and learning methods that are of interest to the students. Thus, in line with the development of the world of teaching and learning technology, educators can deliver creative and innovative teaching and learning methods such as the use of *ECE City's* experimental simulation games. This is in line with the opinion of Mozaffar Reyhaneh (2019) who found that the external environment helps students understand the context and characteristics of the environment to support creativity in the game. We can define it in both variables. We build a diagram to clearly determine the construction or variables of the research topic and its relationship, which are shown using the arrows as in Figure 2.

Figure 2: Research Conceptual Framework



3. Methodology

3.1 Research Design

The purpose of this section is to clarify the design of the study. We as researchers use Parallel Mixed Method Design. In this regard, qualitative research and quantitative research are carried out independently, and the results are brought together in the overall interpretation (Creswell & Plano, 2011).

3.2 Study Instruments

3.2.1 Educator Demographic Information Questionnaire

This instrument aims to collect information on respondents who participated in this study. There are 10 things, which are things 1 to 9 are the discussion of questions about personal matters. Article 10 is information about interest in learning environmental education.

3.2.2 Observation Checklist Form on Challenges

In this study, we as researchers identified the challenges educators face in environmental education by using Observation Techniques. We studied respondents based on the Observation Checklist. It has five observation items, namely (1) what are the main constraints that educators face to teaching environmental education? (2) Is there a time constraint to teach environmental education? (3) How is the involvement of school staff and administrators in teaching environmental education? (4) Is there a lack of knowledge and experience? (5) Is there a lack of reference and exposure resources to teach environmental education? Then, we process the transcripts of the observational results using *N Vivo Version 11* computer software.

3.2.3 Primary School Environmental Education Teaching Strategy Questionnaire Form

In this study, we as researchers identified the teaching strategies that educators use in environmental education by using a Primary School Environmental Education Teaching Strategy Questionnaire Form. This questionnaire has 20 items. This instrument aims to obtain the respondent's feedback in terms of his knowledge and skills on the teaching strategy of primary school environmental education. It consists of four strategies, namely (a) Teaching about the natural environment, (b) Teaching on the cultural environment, (c) Teaching about habitats, and (d) Teaching about ecosystems. In this study, researchers used the Five-Point Likert Scale to measure the Very Definite (5), Sure (4), Less Sure (3), Uncertain (2), and Very Uncertain (1) levels. Then, we process the data score using *Statistical Package for Social Sciences Version 26* computer software.

3.3 Validity of the Study

This section deals with the validity of this study. We improved the validity of the studies by ensuring the validity of the content and validity of the constructs of this Questionnaire. In this regard, the researchers submit the Questionnaire Questions and the Item Specification Table for the review and verification of the expert in the form of the evaluation panel of the study instrument. The researchers also submit the Observation Checklist for the review and verification of expert personnel in the form of a panel of study instrument assessors.

3.4 Reliability of Studies

The purpose of this section is to determine the reliability of this study. The researcher tests the value of the reliability coefficient of the questionnaire item through a pilot study.

3.5 Study Population

This section aims to identify the study population. In this study, the study population was all primary school educators in Malaysia. The target population is educators who are directly involved in teaching primary school environmental education in the state of Perak, Malaysia, which is 11,658 people (Perak State Department of Education, Malaysia, 2022).

3.6 Study Sampling

This section aims to describe the sampling of studies. Researchers used the *Cluster Random Sampling* method to select the respondents of this study. According to Krejcie & Morgan (1970), if the population is 12,000, the number of samples is 380 for quantitative research and 25 respondents for qualitative research.

3.7 Qualitative Data Collection Procedure

This section is intended to elaborate the qualitative data collection procedure. In this study, we used qualitative studies based on several important factors, which are item used on a corresponding qualitative design to do the research and understand the concepts that followed the study (Bryman, 2018). This is appropriate for studies related to the analysis of the challenges faced and teaching strategies used by educators in environmental education (Ireson, 2018).

3.7.1 Observation Techniques

To collect qualitative data, researchers use observational techniques, which are techniques to evaluate study variables, i.e., the challenges educators face in environmental. Daphni (2018) also asserts that through observational techniques, researchers can determine a subject's behaviour based on the variables that have been identified. The first thing to consider is the observation technique. We took 32 weeks to make observations to enable researchers to study 25 primary school teachers and collect subjective data on their quality. We record what it does and how it behaves in a given situation. It's a step of collecting data without involving direct communication with respondents.

In addition, observation techniques are also carried out during the interview, which are based on using signalling techniques, tone of voice and other things that can respond to and return from the respondent (Acheson, 2017). Most importantly, researchers monitor information in the natural environment. The activity and behaviour of the respondents are recorded for the analysis of the results of the study. Formal observation includes observations related to travel agendas, discussions, environmental programs, and the state of the form of tasks. Further, observation techniques are used to evaluate the responses given by the respondent. If the researcher can prove that the respondent is in a less comfortable state and is still not willing to share information, then the researcher changes the question presentation technique. Researchers made a direct observation where it can add value to the reliability of observational findings (Haliza Abdul Rahman, 2018).

The next way is to measure the reliability of observations through the following two methods, which are the technique of repetition of observations with short intervals of similar information, i.e., the observation by contradiction of events with similar items. In this study, we made the expectation that the observations of the studies produced must be correct and valid and reliable to be used as a result of this study.

3.8 Qualitative Data Processing and Analysis

This section deals with the steps of processing qualitative data. Researchers use qualitative studies because they use the following question, which is the question of how. In this study, researchers used observational techniques to obtain data. Thus, the researcher uses a qualitative data analysis procedure based on an inductive approach on 25 respondents. In this regard, the researcher himself monitors and makes formulations.

For the first step, the researchers denounced the themes and categories of common sense, procedure, terms, and specific words that were obtained through observational results. This method is expressed as an open coding identification technique. The basis for this survey is to know the categories related to the survey, which are related to identifying the results of the information and phrases as desired. Next, the step of grouping the words on the theme form and the part is written on a piece of paper such as notes and mind maps and begins to match the information that is constantly repeated. In the second step, the categories found to be revised to examine there was no information in the same category. Obviously, this method of associating between categories and subcategories is clearly named for later reference. In the third step, the data is beginning to be evaluated based on the knowledge and experience available. Researchers continue to engage third parties, i.e., colleagues, to verify the results and findings of the data. Finally, in the fourth step, the researchers wrote the results to answer the question of the study. We attributed the findings to the initial study and subsequently produced the findings in writing form. Obviously, step 3 and step 4 this is called the process of formulating and verifying.

3.9 Quantitative Data Collection Procedure

This section deals with quantitative data collection procedures. In the study, researchers used survey techniques to obtain data from 380 respondents. Survey techniques are one of the specific ways to gather information about a group of populations (Davis, Green, and Reed, 2017). Researchers collect quantitative data using questionnaire instruments. Each respondent uses a set of questions related to the questionnaire. We give respondents time to read the questionnaire items for three days, and then the respondents answer those questions transparently.

3.10 Study Ethics

The purpose of the section is to elaborate on the ethics of the study. In this study, the researchers provided a description so that respondents understood what was enough to answer the question. Researchers do not ask embarrassing questions, cause emotional chaos, and unpleasant experiences. Furthermore, the researchers did not expose respondents to mental or physical stress. In this study, we provided all the information related to this study question. We act to deliver complete data from the context of the study and do not falsify findings or present misleading facts. To maintain the confidentiality of the respondent, the researcher does not disclose personal information until it could jeopardize the safety or dignity of the respondent.

3.11 Work Schedule and Duration of The Study

This section aims to present the work schedule and duration of the study. Researchers used Gantt Charts in charting the status of study workflows through the correct techniques. Researchers took 32 weeks for data collection activities.

Pilot Study

The meaning of this section is to present the findings of the pilot study. To undergo this pilot study, researchers have applied for official permission from the Planning and Policy Studies Division of the Ministry of Education. In the pilot study, researchers randomly selected respondents. Researchers also ensure that every respondent selected for this pilot study must be trustworthy, honest, and willing to study everything in this study. Researchers conducted a pilot study to test the instrument of this study, which is to determine that the study respondents could understand the questions posed by the researchers.

Moreover, it is to ensure that questions have a simple language structure to understand. This pilot study aims to ensure that the study instruments consist of questions about how challenges educators face and what is the level of teaching strategies educators use in primary school environmental education. In addition, the assumption that other researchers using this instrument will obtain the same results as the findings of this study. Researchers selected 32 respondents based on age criteria, academic levels, and teaching experience. This pilot study aims to ensure that the study instrument has a high reliability index. The results of the pilot study found that the value of the *Alpha Cronbach* coefficient is 0.96, which is very high (Gordon, 2018).

4. Results

4.1 Summary of Respondents Profile

This section serves the purpose of elaborating the profile of the respondents of this study. The study involved 380 primary school teachers from the state of Perak, Malaysia. A summary of the respondent's profile is as per Table 1.

Table 1: Summary of Respondent Profiles

Age	Frequency	Percentage
< 30 years old	76	20
31 – 40 years old	152	40
41 – 50 years old	114	30
50 years old >	38	10
Total	380	100

Duration of Service	Frequency	Percentage
Less than 10 years	152	40
Between 11 – 20 years	152	40
Over 20 years	76	20
Total	380	100

Professional	Frequency	Percentage
Diploma in Teaching	380	100
Total	380	100

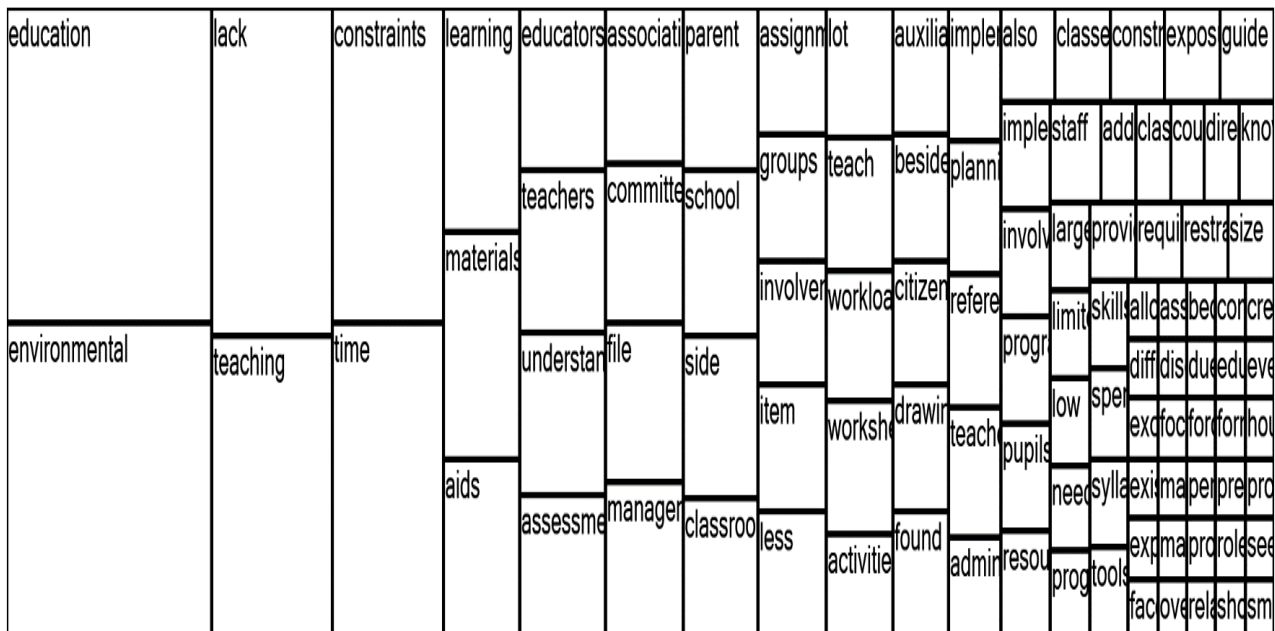
4.2 Coding Data Related to Research Questions

4.2.1 Data Analysis Study Question 1: How Challenges Are Faced by Educators in Primary School Environmental Education

The purpose of this section is to explain the challenges or constraints faced by educators in primary school environmental education. Researchers used Observation Techniques to collect qualitative data. We analysed qualitative data using *N Vivo Version 11* computer software. To describe the challenges or constraints faced by educators in primary school environmental education, the researchers carried out the following two steps, namely:

(a) Step 1: Researchers sort information by category based on priority hierarchy by engaging research partners to ensure that the categorization performed is reliable or of high reliability. The output print of *N Vivo Version 11* is depicted as Figure 3.

Figure 3: Information By Category Based on Hierarchy About Challenges Are Faced by Educators in Environmental Education



(b) Step 2: The researcher performs the analysis through data interpretation as below.

Base on Figure 3, the results of this study show that some teachers are experiencing routine and resource constraints. Some of those teachers experienced constraints in class sizes and teaching resources. Almost all school staff comprised of teachers, committee heads, administrators, and head teachers who teach environmental education experience a constraint on knowledge and skills. Many teachers show a passionate commitment to conducting environmental education teaching in primary schools. However, there are a few teachers who can master the concept of environmental education well.

4.2.2 Data Analysis Study Question 2: What Is the Level of Use of The Educator’s Teaching Strategy in Primary School Environmental Education

The purpose of this section is to identify the level of use of the educator's teaching and learning strategy in primary school environmental education. Researchers use survey techniques to collect

quantitative data. Researchers analysed quantitative data to find mean Central Tendency by using SPSS Version 26 software. The results of the analysis as in Table 2.

Table 2: Level Of Use of The Educator's Teaching Strategy

Level of Use of The Educator's Teaching and Learning Strategy	Score	Min Score	Standard Deviation	Frequency	Percentage
High Level	86 – 100	86	8.3	211	56%
Low Level	53 – 85			169	44%
Total				380	100%

Based on Table 2, a central tendency is calculated to summarize data for variables of the level of use of teaching and learning strategies. Dispersion measures are calculated to understand the variability of scores for variables of the level of use of teaching strategies. Here are the results of this analysis; N = 380, M = 86, SD = 8.3. When we look at the point, it appears that most teachers have a high level of use of teaching and learning strategies. However, based on the large standard deviation, it appears that the level of use of the teaching and learning strategy is quite noticeable in the difference. Primary school teachers have a high level of use of teaching strategies in terms of specific actions in teaching about the natural environment, teaching about the cultural environment, teaching about habitats, and teaching about ecosystem.

5. Discussion and Conclusions

The findings of this study found that the role of teachers is crucial in promoting more efficient environmental education learning, where the high commitment of teachers can increase the motivation of more effective learning towards pupils. It is in parallel with the study of Takov and Djia (2020) which confirms that teachers need to be committed and passionate about teaching well. In addition, the lack of knowledge factor causes the delivery of environmental education knowledge cannot be given properly to students. It is in line with the findings of John's study (2020) based on the theory of behaviourism, where it asserts that teachers need to have a high level of knowledge to effectively strengthen learning sessions. The results of this study show that almost all school staff consisting of teachers, committee chairmen, administrators, and head teachers who teach environmental education experience challenges or constraints in terms of knowledge and skills. It is in line with the results of a study conducted by Valerie (2017) which found that teachers are not creative to implement more active and conducive classroom learning and atmosphere.

In turn, the findings of this study are in line with the results of a study conducted by Margaret (2017), which is a fundamental asset to attract students as well as foster students' creativity in environmental-related educational activities. The findings of this study are similar to the results of a study conducted by Muhammad Ibrahim Muhammad Damanhuri (2017), which found that teachers only teach environmental titles or content known to them while difficult or scientific titles are underserved. The findings of this

study are also in line with a study by Lynch (2018) that found that some teachers are less competent in teaching environmental education because they lack knowledge and skills. The results of this study found that there are few teachers who can master the concept of environmental education well. It is consistent with the Theory of Challenge and Support by Sanford (1967) stating that in terms of a challenge situation, it refers to a situation in which an individual does not have the skills, knowledge, or attitude to overcome it.

In addition, the study found that many teachers showed a passionate commitment to conducting environmental education teaching in primary schools. This finding is also in line with the Theory of Challenge and Support by Sanford (1967) which states that in terms of support conditions, it refers to buffers in an environment that helps individuals to successfully meet challenges.

The results of this study show that most primary school teachers have a high level of use of teaching strategies in terms of specific actions in teaching about the natural environment, teaching about the cultural environment, teaching about habitats, and teaching about ecosystems. These findings are consistent with a study by Olofinkua (2020) which states that many teachers are aware of the environmental issues that exist today, but teachers do not know much about them. These findings are in line with the findings of a study conducted by Busch (2019) in which he found that although environmental awareness exists among teachers, his knowledge of the environment is not enough. The findings of this study show that primary school teachers have a high level of use of teaching and learning strategies in teaching about the natural environment.

However, the level of use of teaching and learning strategies is quite significant in terms of differences. The findings of this study are in line with the results of a study conducted by Naamal Kaushalya (2018) which also emphasizes that field activities are activities that can provide an experience to improve the level of mastery of learning of students involved in environmental education. This finding is also in line with the category of in-depth understanding in the Environmental Education Strategy Model by Monroe, Andrews & Biedenweg (2008) which states that teachers build a sense of locality to clarify and improve understanding of information and environmental issues through teaching strategies such as role-playing, discussion, games, simulations, and field studies.

This section aims to elaborate on the conclusions of this study. Based on the findings of this study, there are several implications or effects on the practices of educators or teachers. In this regard, the teacher effectively brings teaching inside and outside the classroom. In addition, teachers raise high spirits in successful learning. Moreover, educators are also creative in conducting learning activities that bring students side by side with nature and using various active teaching techniques such as video screenings and experimental activities.

Furthermore, educators face challenges or constraints such as lack of funding, lack of equipment, lack of sufficient time to teach, lack of knowledge related to the environment, and lack of regular monitoring by school administrators. In addition, educators carry out field work and interesting activities will increase the level of mastery or interest of students involved in the field of environmental education. Based on the findings of qualitative studies through observation techniques, we recommend many further studies and some follow-up studies. Among the recommendations is to hold further studies to find a link between teacher strategy and primary school environmental education widely across the country.

In addition, conducted a study to identify the mean difference in teacher strategy at high, medium, and low levels to see the effectiveness of teaching strategy. In addition, conduct further studies using different methodologies and instruments. Furthermore, conducting further studies could use more teacher

numbers as survey respondents. Moreover, conduct further studies that use different theories. Then, hold further studies using different treatments or interventions. Finally, conduct a study of the effectiveness of the comprehensive and present environmental education teaching modules.

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