STRATEGIES, CHALLENGES FACED, AND EXPERIENCES OF SCIENCE TEACHERS AND SCIENTIFIC PERFORMANCE OF STUDENTS AMONG RURAL AND URBAN SCHOOLS

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ABSTRACT

The purpose of this study was to determine and compare the strategies, challenges faced, and experiences of science teachers and the scientific performance of students among rural and urban schools in Liliw, Laguna.

This study aimed to answer the following questions What is the profile of science teachers in terms of Type of School where they teach, Age, Years in Teaching, Teaching Position, and Educational Attainment?; What are the Strategies of Science teachers in rural and urban schools?; What are the Challenges Faced by Science teachers in rural and urban schools?; What are the Experiences of Science teachers in rural and urban schools?; What is the level of performance of Grade 6 pupils in Science? Is there a significant difference between strategies, challenges faced, and experiences of Science teachers and the level of pupils' performance in Science 6 in rural and urban schools?; Is there a significant difference between the level of performance of pupils from rural and from urban schools?; Is there a significant effect between the profile of the Science teachers and the level of performance of pupils in Science 6 from rural and urban schools?; Is there a significant effect between the strategies of Science teachers and the level of performance of pupils in Science 6 from rural and urban schools?; Is there a significant effect between the challenges faced by Science teachers and the level of performance of pupils in Science 6 from rural and urban schools?; Is there a significant effect between the experiences of Science teachers and the level of performance of pupils in Science 6 from rural and urban schools?

The respondents of the study were the forty-two (42) Science teachers and two hundred and fifty-two (252) students from the different urban and rural schools in the district of Liliw in Laguna. A descriptive survey method was employed in this study.

The following were the significant findings of the study; There is a significant difference between strategies, challenges faced, and experiences of Science teachers and the level of pupils' performance in Science 6 in rural and urban schools; There is a significant difference between the level of performance of pupils from rural and urban schools; There is a significant effect between the profile of the Science teachers and the level of performance of pupils in Science 6 from rural and from urban schools; There is a significant effect between the strategies of Science teachers and the level of performance of pupils in Science 6 from rural and from urban schools; There is a significant effect between the challenges faced by Science teachers and the level of performance of pupils in Science 6 from rural and from urban schools; and, There is a significant effect between the experiences of Science teachers and the level of performance of pupils in Science 6 from rural and urban schools.

Based on the results gathered from the study, the following are being recommended: The strategies, challenges faced, and the experiences of teachers should be brought into consideration in improving the education system in the Philippines since they have an impact or influence on students' academic performance, particularly in Science; Discrimination between the performances of students from rural and urban is highly discouraged since there is no significant difference between where the school is located, whether rural or urban; and, Implementation of such programs for teachers and students that are related to Science is recommended.

Keywords:

Challenges Faced, compare, experiences, rural schools, scientific performance, strategies, urban schools

INTRODUCTION

> "Quality without access will lead to inequality and exclusion; access without quality will limit the potential and would not bring [about] the desired results,"
>
> – Matthew Opoku Prempeh

Science is very important in everyday life, especially in a society where knowledge is key. It totally impacts a lot of the choices being made every day. As science learning resources get more and more complicated, it is harder for regular folks to wrap their heads around it. If educators want to help people understand science better, they can use epistemic cognition, motivated reasoning, and conceptual transformation research to figure out what is holding them back and how to fix it. So basically, it explains how these categories affect what people think they know about science and what science is really all about. they got to give people some tips on how to get smarter about science (Sinatra, et al., 2014).

Additionally, teaching science has challenges and advantages. One of the toughest things for science teachers is to create classes that not only make students want to learn but also keep them engaged. It is easier for students to stay focused when they can relate to what they are learning. This gets students to really get into the action. If teachers dig and like what they are teaching, they will totally get students' attention.

Moreover, one of the teacher's roles is to help students understand stuff and skills that they will use in their lives, not just to help them memorize things for a test. If students learn how to classify, observe, measure, communicate, infer, anticipate, and experiment, they will be set not just for science class, but for anything, life throws them the way. Teachers should totally push students to level up their thinking game, like being able to size up situations and figure out what to do next.

However, in rural remote areas, children have limited or no access to fundamental learning resources such as well-equipped classrooms, computers, labs, and playgrounds. Teachers are frequently unqualified or may not show up, resulting in poor educational quality. Indeed, the importance of rural teachers and their participation in professional learning is crucial to communities all around the world. Access to professional learning opportunities might be difficult for teachers working in remote areas.

Rural teachers, like rural pupils, should not be denied access to high-quality learning environments because of their geographical isolation (Halsey, 2018). In this matter, teachers continue to be active members of the greater community in which they are positioned via daily practice and interactions. Changing policy environments and efforts are communicated to teachers via multiple channels of communication, engagement, and reflection (Choy, et al., 2016).

Also, Posey-Maddox (2014) cited that when middle-class parents participate in urban school communities, they can bring a slew of positive outcomes, such as new educational opportunities and increased diversity. However, their participation may unintentionally marginalize less-affluent parents and limit low-income students' access to improving schools. Posey-Maddox (2014) argued that school reform

efforts, which typically equate improvement with rising test scores and increased enrollment, require more equity-focused policies to ensure that low-income families benefit from and participate in school change.

Also, lots of scholars from all over the world have looked into how living in a rural area is different from living in an urban. These studies say that children from urban actually do better in school than children from rural. It is not about being smart or not, it is just that urban and rural children have different resources around them that affect how they learn and what they can do. So, like, the community got to make sure the school resources for students in the rural is tailored to their needs. But it is also very important to make sure students are taught in a way that they can totally get it.

Hence, this study aimed to determine and compare the strategies, challenges faced, and experiences of science teachers and scientific performance of students among rural and urban schools in Liliw, Laguna.

This study aimed to determine and compare the strategies, challenges faced, and experiences of science teachers and scientific performance of students among rural and urban schools in Liliw, Laguna.

Specifically, it sought to answer the following questions:

1. What is the profile of science teachers in rural and urban schools in terms of:
    1.1 Type of School where they teach;
    1.2 Age;
    1.3 Years in Teaching;
    1.4 Teaching Position; and
    1.5 Educational Attainment?
2. What is the level of Strategies of Science teachers in rural and urban schools?
3. What is the level of Challenges Faced by Science teachers in rural and urban schools?
4. What is the level of Experiences of Science teachers in rural and urban schools?
5. What is the level of performance of Grade 6 pupils in science through achievement test?
6. Is there a significant difference between strategies, challenges faced, and experiences of science teachers and the level of pupils' performance in science 6 in rural and urban schools?
7. Is there a significant difference between the level of performance of pupils from rural and urban schools?
8. Is there a significant effect between the profile of the Science teachers and the level of performance of pupils in science 6 from rural and from urban schools?
9. Is there a significant effect between the strategies, challenges faced, and experiences of science teachers and the level of performance of pupils in science 6 from rural and from urban schools?

REVIEW OF RELATED LITERATURE

Students' Performances in Rural and Urban Areas

Maddox (2014) cited that researchers discovered that urban students frequently outperform students from rural areas in terms of grades. Lack of resources and limited opportunities are two factors

that affect rural students' performance. On the other hand, the outstanding performance of urban students can be linked to improved academic infrastructure and access to a broader range of information available through digital platforms.

On the other hand, in recent decades, an increasing number of middle-class parents have considered sending their children to urban public schools, and many end up becoming involved in them. Their presence can provide much-needed material resources to such schools, but as Linn Posey-Maddox (2014) demonstrates in his study, it can also introduce new class and race tensions, and even exacerbate inequalities. When Middle-Class Parents Choose Urban Schools, a sensitive examination of the benefits and drawbacks of middle-class transformation, asks whether it is possible for our urban public schools to have both financial security and equitable diversity.

Science has a significant role in day-to-day living, particularly in the context of a culture that places a premium on education and information. It has a significant bearing on a great number of the decisions that are made on a daily basis. It becomes increasingly difficult for laypeople to comprehend scientific concepts as informational tools for studying science get ever more intricate. Research on epistemic cognition, motivated reasoning, and conceptual transformation can be used by educators who want to assist students in gaining a deeper understanding of scientific concepts to determine what is preventing students from doing so and how to address the issue. In a nutshell, it clarifies how these categories influence what individuals believe they know about science as well as what science is actually all about. They are obligated to offer them some advice on how to improve their scientific knowledge. (Sinatra, et al., 2014).

In addition, there are both difficulties and rewards associated with teaching science. One of the most challenging tasks for science instructors is to design lessons for their classes that not only motivate students to learn but also keep them interested in what they are doing throughout the class. When students are able to make connections between what they are learning and their own lives, it is much simpler for them to concentrate and stay on task. Students are able to participate much more actively in the activity as a result of this. If teachers are genuinely interested in and passionate about the content they are imparting to pupils, they will have no trouble capturing their attention.

According to Hendrix (2019), previous studies have shown that the setting in which pupils are educated plays a significant role in the development of their abilities. The ability to learn can be impacted by a variety of factors, such as where a person sits, the amount of light and noise present, and even the color of the walls. Students who attend classes in pleasant environments are more likely to be motivated and engaged in the subject matter, and they also acquire a greater depth of knowledge. On the other side, it will be much more difficult for students to learn and maintain their interest in classes that have unfavorable environments, such as those that are unpleasant, noisy, or full of distractions. Keeping this in mind, it is extremely important to investigate how the environment influences the way an individual studies as well as some of the most effective strategies to set up his perfect learning environment.

In addition, one of the tasks of the instructor is to assist students in comprehending material and developing abilities that will be useful to them throughout their life, and not merely to assist students in memorization of information for examinations. Students will be well prepared not only for science class but also for anything else that life may throw their way if they learn how to categorize, observe, measure, communicate, infer, predict, and experiment. These skills will serve them well throughout their lives. It is

imperative that educators encourage children to develop higher levels of critical thinking, including the ability to evaluate different scenarios and select an appropriate course of action.

However, children who live in rural or distant places have little or no access to core educational resources. These resources include well-equipped classrooms, computers, labs, and playgrounds. The quality of education is often compromised when teachers lack the necessary credentials or just do not show up for work. In point of fact, the significance of rural educators and their involvement in ongoing professional development is of the utmost significance to communities all over the world. Teachers who work in more rural places may have a more difficult time getting access to chances for professional development.

It is unfair that teachers and students in rural areas are often geographically separated, as this should not prevent them from having access to high-quality educational settings. (Halsey, 2018). Through the routine activities and interactions that they participate in on a daily basis, educators maintain their status as engaged members of the larger community within which they are situated. Multiple modes of communication, active participation, and reflective practice are utilized in order to keep educators apprised of evolving policy contexts and actions. (Choy, et al., 2016).

Additionally, Posey-Maddox (2014) found that when middle-class parents join in the communities of urban schools, they can bring a plethora of positive outcomes with them. Some of these benefits include new educational opportunities and improved diversity. On the other hand, their involvement can, unintentionally, exclude parents of children from lower-income families and restrict the opportunities available to students from those families to attend better schools. Posey-Maddox (2014) suggested that school reform efforts, which often equate improvement with rising test scores and increased enrollment, require more equity-focused policies to ensure that low-income families benefit from and participate in school change. Posey-Maddox's argument was based on the fact that school reform efforts typically equate improvement with growing test scores and increased enrolment.

The Science Teachers and Their Teaching Strategies

Several challenges such as poor road connectivity, power shortages, and poor internet connectivity, have resulted in students falling behind and having limited exposure.

Hung, et al. (2012) discovered in their study that technology-assisted Problem-Based Learning (PBL) helped increase students' motivation to learn science, problem-solving skills, and learning accomplishment. In addition, some research, however, indicates that project based digital storytelling strategy has no substantial impact on improving students' academic success (Chang and Tseng, 2011).

Meanwhile, the attitudes of preservice and in-service primary teachers toward science are critical for primary science education research. However, because of the weak definition and conceptualization of the notion of primary teachers' attitudes toward science, development in this field of study has been modest (van Aalderen‐Smeets, et al., 2012).

Despite how important it is to train good teachers and how important the role of teacher educators (TEs) is, this empirical study is about the specialized knowledge that scientific TEs bring to teacher education. Individual interviews and storylines were done with 12 experienced science TEs from four different teacher education institutions in Australia and the Netherlands to learn about their goals for

teaching science and how their expertise has grown based on their professional background and experiences. The results of this exploratory study show that these TEs have similar concerns but very different strategies. (Berry & Van Driel, 2013). Also, science teachers need to keep in mind that experience just for the sake of experience is not enough to teach. Berry and Van Driel (2013) say that the best educational experiences are those that give teachers a lot of help to learn, like ongoing assessment and evaluation, time and chances to think, administrative and community support, and chances to watch and be watched. The goal of science teacher education should be to encourage teachers' natural curiosity and help them think systematically about their views, actions, and ways of knowing in order to learn more. At every point in their jobs, teachers need to keep questioning and changing their ideas about how to teach and learn science, as well as how to learn from experience. It takes time and practice to learn how to watch and evaluate teaching, find, frame, and reframe practice problems, take action, and figure out what that action means.

Furthermore, teachers' interpretations are critical to the process. Teachers should take responsibility for their learning rather than being confronted with other perspectives and given prescriptions for better practice. Finally, the studied complexity studies recommend that science teachers should consider addressing the system of beliefs rather than individual views. Reform attempts argue for scientific education that weaves together scientific knowledge, the essence of science, and science processes. Similarly, teacher educators can explore targeting potential teachers' belief systems about scientific knowledge, science nature, and science processes (Berry & Van Driel, 2013).

METHODOLOGY

After obtaining the permission from the research adviser to proceed with the conduct of the study, the researcher asked the permission from the educational authorities (such as the Schools Division Superintendent of SDO Laguna, District Supervisor of Liliw, Laguna, and School principals).

Next, once permission was obtained from such authorities, she had a validity test before she conducted an orientation to the teachers and pupils who served as the respondents of the study. Then, she did the conduct proper to gather the data needed. Fourthly, she collected and analyzed the data gathered to further determine and compare the strategies, challenges faced, and experiences of science teachers and scientific performance of students among rural and urban schools in Liliw, Laguna.

RESULT AND DISCUSSION

Table 1. The Level of Strategies of Science Teachers in Rural and Urban Schools

Strategies	Rural Teachers			Urban Teachers		
In my science class…	***Mean***	***SD***	***VI***	***Mean***	***SD***	***VI***
...I do lecture wherein my pupils are asked to take down notes.	4.474	0.612	Evident	4.182	0.853	Evident
...I make use of infographics, posters, and other printed	4.632	0.597	Highly Evident	4.455	0.596	Evident

materials which are related to our lessons.						
...I ask my pupils to make journals that serve as their diary of lessons learned in Science	3.842	0.834	Evident	3.727	0.703	Evident
...I ask questions that are related to the lesson and to the daily life of my pupils.	4.8947	0.3153	Highly Evident	4.591	0.59	Highly Evident
...I ask my pupils to use localized materials whenever the prescribed materials in our lessons are not available.	4.421	0.692	Evident	4.318	0.716	Evident
...I make my students read Science-related articles/books.	4.368	0.684	Evident	4.227	0.612	Evident
...I instruct my students to take down notes during the lessons.	4.474	0.772	Evident	4.182	0.733	Evident
...I promote active listening of my pupils.	4.8947	0.3153	Highly Evident	4.591	0.666	Highly Evident
...I make use of written assessments in the classroom.	4.7895	0.4189	Highly Evident	4.455	0.671	Evident
...I make use of chalk and talk methods.	4.211	0.535	Evident	4.227	0.752	Evident
...I make use of experiments as my pupils' hands-on activities.	4.211	0.855	Evident	4.182	0.733	Evident
...I let my pupils explore the answers or solutions by themselves in the problems I gave them.	4.368	0.761	Evident	4.273	0.703	Evident
...I let my pupils explore around not only in the classroom but also inside the school premises to observe whenever we are having an observation activity.	4.579	0.769	Highly Evident	4.273	0.55	Evident
...I utilize technology in my teaching, particularly PowerPoint presentations and videos.	4.684	0.582	Highly Evident	4.7273	0.456	Highly Evident
...I utilize differentiated activities in my lessons (role play, dancing, singing, etc.)	4.368	0.761	Evident	4.409	0.59	Evident

...I make use of performance assessments rather than written assessments.	4.579	0.607	Highly Evident	3.909	0.811	Evident
...I usually just instruct my pupils and then just facilitate them in their activities.	4.211	0.713	Evident	3.955	0.785	Evident
...I give my students activities that need web searching to develop their ICT skills.	3.895	0.737	Evident	3.909	0.75	Evident
...I let them assess their own work and their classmates' work.	4.316	0.749	Evident	3.955	0.785	Evident
...I give activities that promote student-centered learning.	4.632	0.597	Highly Evident	4.5	0.598	Highly Evident
Level of Strategies	**4.442**	**0.437**	**Evident**	**4.252**	**0.426**	**Evident**

Legend: *4.51 – 5.00 = Highly evident* *3.51 – 4.50 = Evident*

2.51 – 3.50 = Moderately Evident 1.51 – 2.50 = Poorly evident

1.00 – 1.49 = Not Evident

Table 1 shows the Level of Strategies of Science Teachers In Rural And Urban Schools. It shows rural teachers were highly evidently able to ask questions that were related to the lessons and to the daily life of their pupils (M=4.895, SD=0.315) and highly evidently able to promote active listening to their students (M=4.895, SD=0.315) which both ranked first. These were followed by rural teachers were highly evidently able to make use of written assessments in the classroom (M=4.790, SD=0.419). Moreover, rural teachers were evidently able to ask their pupils to make journals that serve as their diary of lessons learned in Science (M= 3.842, SD=0.834) which was last in rank.

On the other hand, urban teachers were highly evidently able to utilize technology in teaching, particularly PowerPoint presentations and videos (M=4.727, SD=0.456), was first in rank. The second in rank was that urban teachers were highly evidently able to ask questions that are related to the lessons and to the daily life of their pupils (M= 4.591, SD=0.590). The last in rank was that urban teachers were evidently able to ask their pupils to make their journals that serve as their diary of lessons learned in Science (M=3.810, SD=0.770).

Furthermore, the level of strategies between rural schools and urban schools both fell under evident. (M=4.442, SD=0.437; M=4.252, SD=0.426). The results imply that although the top strategies between rural and urban schools were different, other strategies do not differ from each other.

Moreover, the majority of the science lessons were based on situations from the teachers' and students' real lives. Science lessons encompassed personal, societal, global, and historical circumstances. Many of the real-world tasks employed by the teacher in the mathematics courses were cognitively challenging, in contrast to scientific education (Yanik & Sarin, 2016).

Table 2. The Level of Challenges Faced by Science Teachers in Rural and Urban Schools

Challenges Faced	**Rural Teachers**			**Urban Teachers**		
As a Science teacher, I encountered/faced the following challenges:	***Mean***	***SD***	***VI***	***Mean***	***SD***	***VI***
Poor internet connectivity in the school where I teach	4.158	0.834	Evident	3.955	0.999	Evident
Lack of teaching materials such as textbooks, posters, television, etc.	3.947	0.621	Evident	3.455	0.963	Moderately Evident
Lack of laboratory tools and equipment	4.263	0.872	Evident	3.591	0.959	Evident
Unavailability of science laboratory/ies	4.421	0.692	Evident	3.773	1.02	Evident
Poor quality learning environment (ambiance)	3.368	0.895	Moderately Evident	3.409	0.734	Moderately Evident
Poor interests of pupils to learning	3.474	0.772	Moderately Evident	3.273	0.767	Moderately Evident
Adapting to the culture of the community where my pupils belong	3.684	1.003	Evident	3.727	0.883	Evident
Adjusting to the monetary needs of my students	3.789	0.918	Evident	3.909	0.684	Evident
Accessibility to government programs that may help my pupils' situation	3.526	0.841	Evident	3.591	0.734	Evident
Insufficient educational support (my pupils) from the government	3.789	0.918	Evident	3.545	0.671	Evident
Level of Challenges Faced	**3.842**	**0.527**	**Evident**	**3.623**	**0.597**	**Evident**

Legend: *4.51 – 5.00 = Highly evident* *3.51 – 4.50 = Evident*
2.51 – 3.50 = Moderately Evident *1.51 – 2.50 = Poorly evident*
1.00 – 1.49 = Not Evident

Table 2 shows the Level of Challenges Faced by Science Teachers in Rural and Urban Schools. It shows rural teachers have evidently faced challenges in the Unavailability of science laboratory/ies (M= 4.421, SD=0.692) which ranked first. This was followed by rural teachers have evidently faced challenges on a Lack of laboratory tools and equipment (M= 4.263, SD=0.872). Moreover, rural teachers have evidently faced challenges on the poor quality of the learning environment (ambiance) (M= 3.368, SD=0.8) which was last in rank.

On the other hand, urban teachers have evidently faced challenges in the poor internet connectivity in their schools (M= 3.955, SD= 0.999) and this ranked first. Urban teachers have evidently faced challenges in adjusting to the monetary needs of their pupils (M= 4.263, SD=0.872). Moreover, urban teachers have evidently faced challenges on poor interest of pupils in learning (M= 3.273, SD= 0.767) which ranked last.

Consequently, the level of strategies between rural schools and urban schools both fell under evident. (M=3.842, SD=0.527; M=3.623, SD=0.597). The results imply that there was a lack of support for science laboratories in rural schools as well as their tools and equipment while in urban schools, there was provided internet connectivity but teachers still experience problems with it.

In relation to this, people living in rural areas are less likely to enjoy strong levels of internet connectivity globally (Odero & Chinapah, 2016). One of the important elements impacting rural teachers' access to professional learning opportunities is a digital connection, which can give possibilities for professional development while reducing geographical distance (Seely Flint, et al., 2017).

Table 3. Level Of Experiences of Science Teachers in Rural and Urban Schools

Experiences	**Rural Teachers**			**Urban Teachers**		
As a teacher, I have experienced…	***Mean***	***SD***	***VI***	***Mean***	***SD***	***VI***
Culture shock on the environment and way of life of the community where my school is located	3.526	0.841	Evident	3.364	1.049	Moderately Evident
Being more patient and understanding to the varied situations my pupils have	4.684	0.478	Highly Evident	4.318	0.568	Evident
Adopting to the culture of the community where my pupils belong	4.526	0.513	Highly Evident	3.909	0.61	Evident
Changing my point of view in life due to the influence of my experiences	4.368	0.496	Evident	4.182	0.588	Evident

Seeing the individualized situations of my pupils which lead me to having empathy for them	4.526	0.612	Highly Evident	4.455	0.596	Evident
Appreciating my pupils' culture and values.	4.632	0.684	Highly Evident	4.5	0.512	Highly Evident
Gaining a lot of learning from the community where I serve	4.526	0.697	Highly Evident	4.7273	0.456	Highly Evident
Being in an event that serve as one of my most unforgettable experiences in life	4.421	0.692	Evident	4	0.617	Evident
Seeing myself serving in my school for the upcoming 10 years	4.474	0.513	Evident	4.273	0.935	Evident
Realizing the worth of being a teacher in the society	4.8421	0.3746	Highly Evident	4.591	0.503	Highly Evident
Level of Experiences	**4.452**	**0.327**	**Evident**	**4.231**	**0.397**	**Evident**
Legend: *4.51 – 5.00 = Highly evident* *3.51 – 4.50 = Evident* *2.51 – 3.50 = Moderately Evident* *1.51 – 2.50 = Poorly evident* *1.00 – 1.49 = Not Evident*						

Table 3 shows the Level of Experiences of Science Teachers in Rural and Urban Schools. It shows rural teachers were highly evidently able to experience Realizing the worth of being a teacher in society (M= 4.842, SD=0.375) which ranked first. This was followed by rural teachers were highly evidently able to experience Being more patient and understanding to the varied situations their pupils have (M= 4.684, SD=0.478). Moreover, rural teachers were evidently able to experience Culture shock in the environment and way of life of the community where my school is located (M= 3.526, SD=0.841) which was last in rank.

On the other hand, urban teachers were highly evidently able to experience Gaining a lot of learning from the community where they serve (M= 4.723, SD=0.456) which ranked first. This was followed by urban teachers were highly evidently able to experience Realizing the worth of being a teacher in the society (M= 4.591, SD=0.503). Moreover, urban teachers were evidently able to experience Culture shock on the environment and way of life of the community where my school is located (M= 3.364, SD=1.049) which was last in rank.

The results also show that the level of experiences of teachers from rural and urban schools in Liliw district both fell under evident (M=4.452, SD=0.327, M=4.231, SD=0.397). This means that both types experience the same like they realized their worth in the society.
According to Spruyt, et al., (2021), a large number of critiques and assessments of teachers' work is typical of the teaching field. According to earlier research, teachers believe that society generally undervalues the value of their profession. The processes that account for the apparent fluctuation in this emotion are poorly understood. But still, self-worth is important.

Table 4. Level Of Performance of Grade 6 Pupils In Science Through Achievement Test

Students' Performance	**N**	**Mean**	**SD**	**VI**
Rural	114	19.526	4.832	Fairly Satisfactory
Urban	140	27.343	8.766	Satisfactory
Total	**254**	**23.835**	**8.235**	**Satisfactory**
Legend: *41 – 50 = Outstanding* *31 – 40 = Very Satisfactory* *21 – 30 = Satisfactory* *11 – 20 = Fairly Satisfactory* *0 – 10 = Did not meet Expectations*				

Table 4 shows the level of performance of grade 6 pupils in the achievement test. This signifies those students from urban schools garnered a mean score of 27.343 and a standard deviation of 8.766 which was interpreted as satisfactory. Meanwhile, those students from rural schools were second in rank and got a mean score of 19.526 and a standard deviation of 4.832 and which was interpreted as fairly satisfactory. On the other hand, the performance of grade 6 pupils in the achievement test in science got a weighted mean of 23.835 and a standard deviation of 8.235 which means that their performance was satisfactory.

This implies that there were more performing grade 6 pupils from the urban schools than from rural schools. The results also reflect the result in terms of the challenges faced by teachers in urban schools wherein the lack of interest in learning of their pupils was ranked last in terms of the problems they encounter in teaching.

Table 5. Test of significant difference between strategies, challenges faced, and experiences of science teachers and the level of pupils' performance in science 6 in rural and urban schools

Rural Teachers vs Urban Teachers	**T-Value**	**p-value**	**VI**
Significant Difference of Strategies	-1.31	0.192	Not Significant
Significant Difference of Challenges Faced	-1.52	0.132	Not Significant
Significant Difference of Experiences	-1.53	0.130	Not Significant
Significant difference between teachers' strategies, challenges faced, and experiences and Level of Students' Performance	-15.48	0.000	Highly Significant

Table 5 shows the test of the difference between strategies, challenges faced, and experiences of science teachers and the level of pupils' performance in science 6 in rural and urban schools. It shows that having the p-value of 0.000 means that there was a highly significant relationship between teachers' strategies, challenges faced, and experiences and the Level of Students' Performance. This implies that

the teachers' strategies, challenges faced, and experiences and Level of Students' Performance do vary from each other. However, the rural teachers' and urban teachers' teachers' strategies, challenges faced, and experiences do not have significant differences.

According to Mohan, et al., (2017) as a result of disparities in infrastructure, library resources, and information and communication technology, rural educators' Professional Development requirements range widely. Those that have greater means to do so also have more chances to study. Therefore, teachers' pedagogies vary across urban and rural schools because of differences in the availability and quality of resources (Mohan, 2015).

Table 7. Test of significant difference between the level of performance of pupils from rural and urban schools

Performances of Students	T-Value	p-value	VI
Significant Difference of Performances	8.52	0.000	Highly Significant

Table 7 shows the test of significant difference between the level of performance of pupils from rural and urban schools. It signifies that having the p-value of 0.000 means that there was a highly significant difference between the level of grade 6 pupils' performances from rural and urban schools. This also means that the null hypothesis was rejected. This implies that the two groups of students have different levels of performance in science.

In this regard, green spaces in rural areas have been shown to improve people's physical and mental health, as well as their sense of belonging in their communities and their behavior. It is currently thought that these ideas can be used in classrooms. Communities are incorporating more green areas into educational facility planning and design, and as a result, modern school buildings and spaces are starting to reflect the principles of green and healthy learning environments. (Ozer, 2007; Kweon, et al., 2017).

Table 8. Test of a significant effect between the profile of the Science teachers and the level of performance of pupils in science 6 from rural and from urban schools

Teachers' Profile		T-Value	p-value	VI
Type of School	Performance Of Students	-20.06	0.000	Highly Significant
Age		17.45	0.000	Highly Significant
Sex		-19.68	0.000	Highly Significant

Number of Years in Service		-18.33	0.000	Highly Significant
Teaching Position		-19.27	0.000	Highly Significant
Educational Attainment		-19.63	0.000	Highly Significant

Table 8 shows the Test of significant effect between the profile of the Science teachers and the level of performance of pupils in science 6 from rural and from urban schools. It justifies that all the teachers' profile has a highly significant effect to the performances of grade 6 pupils. Having the p-values of 0.000 brought to the decision of rejecting the null hypothesis.

This implies that teachers' characteristics impact how students gained learning in the science classroom. Dal-Tastan, et al. (2018) cited that Science education and student learning outcomes benefit greatly from teachers with high levels of self-efficacy.

Table 9. Test of a significant effect between the strategies, challenges faced, and experiences of science teachers and the level of performance of pupils in science 6 from rural and urban schools

Teachers' Strategies, Challenges Faced, and Experiences	**T-Value**	**p-value**	**VI**
Performances of Students	-15.48	0.000	Highly Significant

Table 9 shows the test of a significant effect between the strategies, challenges faced, and experiences of science teachers and the level of performance of pupils in science 6 from rural and urban schools. It signifies that there was a highly significant effect between the strategies, challenges faced, and experiences of science teachers and the level of performance of pupils in science 6 from rural and urban schools. Having a p-value of 0.000 means that the null hypothesis must be rejected.

This implies that the teaching approaches, the problems encountered, and the experiences of teachers affect students' motivation to learn and to perform well in class. According to Kini and Podolsky, (2016) beyond the enhanced academic growth of the pupils they instruct, more experienced teachers bring a variety of crucial additional benefits to the community of their respective schools.

CONCLUSION

Based on the data gathered in the study, the following could be therefore brought into conclusions:

1. There are no significant differences between the strategies, challenges faced, and experiences of science teachers, but there is a significant difference between the level of pupils' performance in

science 6 in rural and urban schools and the strategies, challenges faced, and experiences of science teachers

2. There is a highly significant difference between the level of performance of pupils from rural and urban schools.
3. There is a highly significant effect between the profile of the Science teachers and the level of performance of pupils in science 6 from rural and from urban schools.
4. There is a highly significant effect between the strategies, challenges faced, and experiences of science teachers and the level of performance of pupils in science 6 from rural and from urban schools.

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RECOMMENDATIONS

The following are being recommended by the researcher:

1. The strategies, challenges faced, and the experiences of teachers should be brought into consideration in improving the education system in the Philippines Since they have an impact or influence on students' academic performance, particularly in science

2. There should be equity and equality in the implementation of different programs and projects for urban and rural areas since it has been seen that there is a significant difference between their performance.

3. Training and programs for the professional development of teachers are highly encouraged for the reason that it will be beneficial on students' performance.

4. Teachers should undergo more training on strategies in the classroom and that differentiated strategies and activities are being advised.

5. Teachers' voices on their problems and challenges should be heard so students' performance in science will be improved as well

6, Teachers' support system must be established in order to build their self-value that may affect students' performance.

7. Further studies related to this topic was being recommended.

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