Pre-service Teachers' Level of Cognition in Teaching Grammar: Basis for Skills Refinement Plan Garachico, Myrnalyn C., Fortaleza, Queeney S., Depison, Ma. Elisa C., and Marcial, Madeleine

Garachico, Myrnalyn C.[1], Fortaleza, Queeney S.[2], Depison, Ma. Elisa C.[3], Marcial, Madeleine[4]

[1]Bachelor of Secondary Education Major in English, Gordon College, Olongapo City, Philippines
garachicomyrnalyn@gmail.com
[2]Bachelor of Secondary Education Major in English, Gordon College, Olongapo City, Philippines
fuegoqueeney@gmail.com
[3]Bachelor of Secondary Education Major in English, Gordon College, Olongapo City, Philippines
lizdepison548@gmail.com
[4]Instructor I- College of Education, Arts and Sciences, Gordon College, Olongapo City, Philippines
marcial.madeleine@gordoncollege.edu.ph

Abstract: Cognition plays a significant role in pre-service teachers' future teaching endeavors, preparing them to become qualified educators. Therefore, what they think, know, and believe is an important issue that needs investigation. Although extensive studies on teachers' cognition in teaching grammar have been published over the years, only some have been conducted on pre-service teachers. This study describes the cognition level in teaching grammar among pre-service teachers of Gordon College, Olongapo City, Philippines. The study used a quantitative descriptive method for 114 purposively chosen students. The data underwent descriptive and inferential measures with the help of SPSS 26 software. The study found that the respondents' level of cognition is high in terms of focus on formS instruction (rules), focus-on form instruction (context and meaning), inductive approach and value of drilling, and very high in terms of deductive approach and importance of grammatical terminology (metalanguage). Also, there was no significant difference in pre-service teachers' cognition in teaching grammar regarding age, gender, and year level. Thus, it shows positive correlations between the factors affecting the respondents' cognitions in teaching grammar. A skills refinement plan called Project GRAMMAR (Guided Real-world Application of Meaningful Methods for Advanced Refinement) was proposed.

Keywords: Cognition, deductive, drilling, focus on forms, focus on form, inductive, metalanguage, pre-service teacher

1. INTRODUCTION

Teaching grammar has undergone notable trends shaping teaching methods and approaches in the ever-evolving education landscape. Thus, these trends have been a long-standing subject of debate and evolution. Research studies in teaching grammar have a long history, but specific questions still need to be answered (Nishimuro & Borg, 2013). Such questions involve whether it should be taught inductively or deductively, whether it should be based on rules or context and meaning-based, and whether metalanguage knowledge and drilling practices enhance learning. Uysal and Bardakci (2014) stated that how grammar is best taught has been a major issue in language teaching. Thus, it becomes even more controversial when pre-service teachers are involved. A growing concern is that they may need more knowledge and skills to teach grammar efficiently. Therefore, examining pre-service teachers' cognition in teaching grammar is necessary.

Pre-service teachers' cognition concerns what they think, know, and believe. Various studies in teaching grammar have been conducted locally and internationally; hence, only a few have been reported on pre-service teachers' level of cognition, specifically in the Philippines, and no existing study on pre-

service teachers' level of cognition in teaching grammar has been published in Olongapo City. To address this research gap, the researchers conducted a study on the pre-service teachers of Gordon College, Olongapo City. The study's main objective is to describe their level of cognition in teaching grammar, which could be a basis for a skills refinement plan.

It also aims to describe the relationship between the factors affecting pre-service teachers' level of cognition in teaching grammar. The research result will benefit the next researchers in the same field to develop a more systematic study and plan for upgrading the approaches, methods, and strategies in teaching grammar.

1.1. Literature Review
Teachers' Cognition and Grammar Teaching

Teachers' cognition concerns what teachers think, know, believe, and do. Borg's (1999) theorization defines teachers' cognition as the unobservable dimension of teachers' professional lives, which has been the focus of empirical and practical interest in language teaching since the mid-90s. These interests continued to delve in recent years. Over the past 20 years, examining language teachers' beliefs and practices has been the subject of inquiry (Barrot, 2016). Teachers' cognition is said to be guided by their views, and these beliefs serve as a filter through which instructional

judgments and decisions are made. Accordingly, Torres and Santos (2021) wrote that teachers' teaching beliefs would strongly impact their decisions; this statement was supported by Gilakjani and Sabouri (2017). However, knowing that many things influence teachers' beliefs, including external and internal influences (Hu & Liu, 2021), is essential.

Fundamentally, teachers play a significant role in the success of grammar instruction in the learning process. The teaching methods teachers employ contribute significantly to the learners' willingness to learn and, consequently, the success of the grammar lessons (Majewski, 2021). In addition, Uysal and Bardakci (2014) wrote that successful curriculum innovation depends on the teachers.

How Should Grammar Be Taught?

Teaching grammar has been the subject of many research studies for several decades. It has been a controversial issue, with long-standing debates on whether and how it should be taught. Should it be taught by explicitly presenting grammatical rules or their use (Majeed, 2018)? There are growing concerns that students would rather avoid learning grammar. They believed that learning grammar entails memorizing formulas, which is a tedious subject (Matkasimova & Makhmudov, 2020). Some issues impacted the students` courage to learn and develop their English skills.

These include students being afraid to speak English in class, needing help understanding the meaning of the text they read, and needing help writing the sentence correctly. Grammar acquisition of an L2 is a complex process. It can be aided by various approaches (Fakazli, 2021); therefore, they should be chosen carefully to ensure effective teaching. According to Souisa and Yanuarius (2020), grammar should be taught through a structural context. It means it presents several sentences/situations of illustration to figure out English structures by incorporating real-life scenarios into their topics.

Therefore, the students are encouraged to learn and practice the language that matches the real-world situation, and the relevant grammatical forms are introduced in that context (Andriani et al., 2021). However, one effect of abandoning grammar teaching in the previous years is the existence of many English language teachers today who need more knowledge of English grammar and must demonstrate proficiency in it (Payton, 2013). This problem has become particularly noticeable when grammar is back in recent years.

FonFS vs. FonF Instruction

Focus on forms instruction refers to language teaching approaches that incorporate explicit instruction and practice of specific linguistic forms, such as grammar rules or vocabulary items, within the context of meaningful communication. In contrast, focus on form instruction emphasizes incorporating language forms incidentally through communicative tasks and activities. Research conducted by Nassaji and Fotos (2013) highlighted that both focus on forms and form instruction can benefit language learning. However, the effectiveness of each approach

depends on various factors, including learner proficiency and the complexity of the target forms. Focus on form instruction, which provides corrective feedback on errors during communicative tasks, can improve learners' language production accuracy, particularly in the long term (Lyster & Ranta, 2013). Additionally, focus on forms instruction, with its explicit teaching of language forms, can be particularly helpful for beginner-level language learners, as it provides a solid foundation for language learning.

In contrast, studies have shown that incorporating form-focused instruction in a content-based language teaching approach can enhance learners' language proficiency. Integrating focus on forms instruction into extensive reading programs can improve learners' vocabulary acquisition and retention (Laufer & Girsai, 2008). Pagcaliwagan (2016) claimed that when English learners are given constant exposure to grammar, their ability to use it increases.

However, utilizing FonF instruction is essential as it allows language learners to prioritize meaning and effectively employ grammar in communicative contexts (Bahari, 2019). Ellis (2015) argued that combining a focus on forms and form instruction in language classrooms can lead to more comprehensive and effective language learning outcomes. When adequate focus is placed on form and meaning, learners will become capable of acquiring language skills efficiently to accomplish their targeted learning outcomes.

Deductive and Inductive Approach in Teaching Grammar

There are two significant ways of teaching Grammar: The deductive and Inductive approach (Sik, 2015). With an inductive approach in teaching grammar, analyzing structures and applying rules are standard practices, and the rise of more communicative approaches, which emphasize language use over rules (Gulyamova, 2019). On the other hand, the deductive technique is when teachers introduce the day's topic and then use leading questions to engage pupils in the new grammatical issue (Takala, 2016). However, students find learning grammar in isolation boring. Therefore, teachers must instill that the goal of teaching grammar should be successful communication (Takala, 2016). It was proven that learning grammar is much easier if the methods employed are student-centered and invoke an appreciation of grammar rules from the student. Students need to be effectively taught how to use proper grammar in order for them to attain, showcase, and use effective writing and communication skills (Majewski, 2021). In concern to this, it was revealed that most teachers needed to be made aware of grammar teaching approaches. School lessons rarely focus on students' production abilities, such as speaking or writing; instead, they focus on mastering grammar rules (Majeed, 2018).

Moreover, Onalan (2018) revealed that teachers preferred teaching grammar directly by presenting grammar rules explicitly. They also reiterated that it was necessary to study grammar rules to use the target language effectively. However, experienced instructors used indirect and direct grammar teaching methods. Sopin (2015) found that even

though students felt that direct or explicit grammar teaching was necessary at the beginning stage when their language proficiency improved, they favored communicative approaches. Sadat (2017) concludes that language instructors should blend grammar teaching with Communicative Language Teaching to achieve both linguistics and communicative competence in the classroom.

Importance of Grammatical Terminology (Metalanguage)

Grammatical terminology (a.k.a metalanguage) refers to how learners employ their overall language comprehension to describe and discuss the intricacies of the language itself (Harun et al., 2017). Metalinguistic knowledge encompasses learners' overall comprehension of the language and their capacity to reflect on and discuss the language using its specific terminology, as described by Ellis (2016). Teachers perceive grammatical terminology as beneficial for students and do not view its usage as excessively challenging (Burgess & Etherington, 2002). Descriptive grammars acknowledge that language is dynamic and its use constantly changes (Al-Mekhlafi, 2011). Therefore, grammatical terminology should be integrated into classroom teaching and learning (Zhang & Sun, 2022).

Value of Drilling

Drilling is a technique used in L2 classrooms, which aims for students to internalize grammatical structures or sentence patterns by repeating them until they can memorize them (Zhang & Sun, 2022). When utilizing drilling techniques, the teacher's role is to engage students in the repetitive practice of the target language, ensuring its familiarity (Jurianto, 2016). This approach aims to enhance students' ability to remember and comprehend new vocabulary. Tice (n.d) explained that drilling is an audio-lingual technique based on students repeating a model provided by the teacher. The focus is on accuracy rather than fluency. Drilling serves the purpose of improving students' pronunciation skills, aiding in the retention of new language items, and assisting teachers in teaching pronunciation to beginners (Astina et al., 2020).

Additionally, teachers use two types of drilling in the classroom: Repetition and Chain Drill. Larosa et al. (2020) wrote that repetition drill is considered the most straightforward form of drill used in language pattern learning, and it can be employed for introducing new vocabulary and is particularly beneficial for pronunciation classes. Anggraini (2018) defined chain drills as enabling students to engage in controlled communication and facilitating the teacher's assessment of their speech; moreover, he added that chain drills can encourage improving students' listening and speaking skills.

2. METHODOLOGY

2.1. Research Design

The researchers utilized a quantitative descriptive method that does not involve experimental manipulation of variables. Instead, it focuses on measuring variables using numerical terms. Quantitative descriptive research is a non-experimental approach to research (Accounting Nest, n.d; Asio, 2021). It focuses primarily on describing the current distribution of variables without emphasizing causal relationships or other hypotheses (Porta et al., 2014).

This study involves the pre-service teachers' profiles about the factors that may affect their cognition in teaching grammar. The main goal is to describe and summarize the data quantitatively using statistical analysis methods. Using numerical measurements, the researchers can quantify different characteristics and dimensions of the variables, allowing for comparisons, summarization, and generalizations. Statistical analysis methods, such as mean, median, mode, standard deviation, and correlations, are commonly employed to analyze the collected data. These techniques help organize and summarize the data in an easily interpretable way and enable researchers to draw conclusions based on the observed patterns and trends.

2.2. Respondents

The study included the currently enrolled second-, third-, and fourth-year English majors of the College of Education, Arts, and Sciences (CEAS) at Gordon College. These participants were chosen because the research focuses on the cognition in teaching grammar of the pre-service teachers within this specific program.

To maintain the study's focus and coherence, certain groups were excluded. These exclusions encompassed individuals who were not English majors, English majors at different academic levels, those who were not currently enrolled, and participants who still needed to meet the specified criteria. These exclusions were necessary to ensure the collected data aligned closely with the research objectives.

Demographic Profile of Respondents

Table 1

Age	Frequency	Percent
19 and below	20	17.5
20-24	86	75.4
25-29	6	5.3
30-above	2	1.8
Gender	**Frequency**	**Percent**
Male	31	27.2
Female	78	68.4
Prefer not to say	5	4.4
Year Level	**Frequency**	**Percent**
Second Year	36	31.6
Third Year	61	53.5
Fourth Year	17	14.9
Total	**114**	**100.0**

Table 1 indicates the demographic profile of the respondents. It can be observed that the respondents are English major pre-service teachers who are 20- 24 years old. It only shows that the numbers indicated are fairly the regular setup in college. Additionally, it can be observed that female respondents dominated their male counterparts, similar to the trend observed in the broader teaching population, and third-year level pre-service teachers had the highest number of respondents in the study.

2.3. Instrument

A set of validated questionnaires was adopted by the researchers from the previous study in China (Zhang & Sun, 2022), which consist of the following parts: (1) the profile of the respondents and (2) factors affecting pre-service teachers' level of cognition in teaching grammar. The survey questionnaire was subjected to exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) for validity and reliability confirmation of the instrument.

2.4. Data Analysis

The researchers subjected the gathered data to the Shapiro-Wilk Test, Kruskal-Wallis test, Spearman rho, frequency count, and weighted mean. All the data and information were gathered to be tallied, tabulated, classified, analyzed, and interpreted. The weighted values assigned to the pre-service teachers' cognition in teaching grammar were patterned after Likert Scaling. Statistical Package for Social Sciences (IBM-SPSS) version 26 was used for all statistical computations.

3. RESULTS AND DISCUSSION

Table 2. Pre-service Teachers' Level of Cognition in Teaching Grammar in terms of Focus-on FormS Instruction (Rules)

	Indicators	Mean	Descriptive Interpretation
1.	If students memorize rules and facts about grammar, it will help them to produce correct language in spontaneous situations.	4.25	very high level of cognition
2.	Students should be encouraged to speak/write accurately from the beginning.	4.26	very high level of cognition
3.	Students need to be consciously aware of a structure's form and its function before they can use it proficiently.	4.39	very high level of cognition
4.	When using language to communicate in English, it is more important to be grammatically accurate than socially appropriate.	3.7	high level of cognition
5.	Accuracy, or correctness in linguistic form, is a primary aim in grammar teaching.	4.31	very high level of cognition
6.	Teachers should focus more on the structure and form than meaning.	3.37	moderate level of cognition
	Average	**4.05**	**Pre-service teachers' cognition in teaching grammar is high in terms of Focus on FormS Instructions (rules)**

Legend: 1.00-1.79= Very low; 1.80-2.59= Low; 2.60-3.39= Moderate; 3.40-4.19= High; 4.20-5= Very high

Table 2 shows the mean distribution of the respondents in Focus on FormS Instruction (rules). It can be gleaned that indicator 3 got the highest mean of 4.39, which has a descriptive equivalent of a very high level of cognition in the Likert Scale, and indicator 6 got the lowest mean of 3.37, with a descriptive equivalent of a moderate level of cognition. The overall mean was posted at 4.05, with a descriptive interpretation of a high level of cognition in the scale. The result can be justified by Fithriani, 2018 who noted that grammar plays a significant role in language learning. Spence (2022) mentioned that grammar rules and memorization can contribute to a student's ability to produce correct language spontaneously. Focus on FormS instruction explicitly emphasizes teaching grammar rules, aiming for accuracy. Saeidi et al., 2012 wrote that proponents of Focus on Forms Instruction believe that second language students could not achieve high levels of linguistic competence (Grammar, vocabulary, phonology) from entirely meaning-centered instruction

Table 3. Pre-service Teachers' Level of Cognition in Teaching Grammar in terms of Focus-on Form Instruction (context and meaning)

	Indicators	Mean	Descriptive Interpretation
1.	Grammar teaching should focus on the meaning of structures and their use in context.	4.25	very high level of cognition
2.	Students learn grammar best through exposure to language in a natural context.	4.39	very high level of cognition
3.	Focusing students' attention on forms is a necessary but not	3.92	high level of cognition

	sufficient condition for the acquisition of grammar.		
4.	Thinking about the grammar rules while talking prevents students from communicating fluently.	4.03	high level of cognition
5.	New grammatical points should be presented and practiced in situations.	4.16	high level of cognition
	Average	**4.15**	**Pre-service teachers' cognition in teaching grammar is high in terms of focus on form instructions (context and meaning)**

Legend: 1.00-1.79= Very low; 1.80-2.59= Low; 2.60-3.39= Moderate; 3.40-4.19= High; 4.20-5= Very high

Table 3 shows the mean distribution of the respondents in Focus on Form (context and meaning) Instruction. It can be gleaned that indicator 2 got the highest mean of 4.39, which has a descriptive equivalent of a very high level of cognition in the Likert Scale, and indicator 3 got the lowest mean of 3.92, which has a descriptive equivalent of a high level of cognition. The overall mean was posted at 4.15, with a descriptive interpretation of a high level of cognition on the scale. The result can be justified by Yu (2013). FonF instruction aims to develop fluency rather than accuracy; language is taught according to context and meaning. Also, Focus on Form assumes that acquisition occurs best when learners' attention is drawn to language items when needed for communication (Loewen,2018).

Table 4. Pre-service Teachers' Level of Cognition in Teaching Grammar in terms of Deductive Approach

	Indicators	Mean	Descriptive Interpretation
1.	Grammar should be taught in an explicit or direct way.	4.31	very high level of cognition
2.	Teachers should teach simple grammatical structures before more complex ones.	4.61	very high level of cognition
3.	Teaching grammar in different units leads to language knowledge which students can use in natural contexts later.	4.36	very high level of cognition
4.	Teachers should begin teaching a new grammar point by explaining the rule.	4.25	very high level of cognition
5.	It is best to give the grammatical explanation first and then practice the rule.	4.37	very high level of cognition
	Average	**4.38**	**Pre-service teachers' cognition in teaching grammar is very high in terms of Deductive Approach**

Legend: 1.00-1.79= Very low; 1.80-2.59= Low; 2.60-3.39= Moderate; 3.40-4.19= High; 4.20-5= Very high

Table 4 shows the mean distribution of the respondents in the Deductive Approach. It can be gleaned that indicator 2 got the highest mean of 4.61, which has a descriptive equivalent of a very high level of cognition in the Likert Scale, and indicator 4 got the lowest mean of 4.25, which has a descriptive equivalent of very high level of cognition. The overall mean was posted at 4.38, with a descriptive interpretation of a very high level of cognition on the scale. The result implies that the respondents view deductive grammar teaching as an appropriate and applicable teaching approach. If well planned, a class using the deductive approach goes from easy to more complex, which may be more appropriate for some learners. It can also be easier for less experienced teachers as there is more control of outcomes; additionally, the teacher can control the level of input language more (OECD,2009).

Table 5. Pre-service Teachers' Level of Cognition in Teaching grammar in terms of Inductive Approach

	Indicators	Mean	Descriptive Interpretation
1.	Having students figure out grammatical rules can help them increase their awareness of English.	4.45	very high level of cognition
2.	Students should be encouraged to create language by a process of trial and error.	4.28	very high level of cognition
3.	Teachers should begin teaching a new grammar point by giving examples.	4.39	very high level of cognition
4.	Grammar explanations should be avoided by the teacher.	3.21	moderate level of cognition
5.	Teachers should help students to work out grammar rules for themselves.	4.20	very high level of cognition

| | | Average | 4.11 | Pre-service teachers' cognition in teaching grammar is high in terms of Inductive Approach |

Legend: 1.00-1.79= Very low; 1.80-2.59= Low; 2.60-3.39= Moderate; 3.40-4.19= High; 4.20-5= Very high

Table 5 shows the mean distribution of the respondents in the Inductive Approach. It can be gleaned that indicator 1 got the highest mean of 4.45, which has a descriptive equivalent of a very high level of cognition in the Likert Scale, and indicator 4 got the lowest mean of 3.21, with a descriptive equivalent of a moderate level of cognition. The overall mean was posted at 4.20, with a descriptive interpretation of a high level of cognition on the scale. According to (Donalo et al., 2017), teaching grammar in an inductive approach keeps the student's brain active as s/he tries to figure out how grammar works and allows the teacher to notice students' questions and correct errors when appropriate. The inductive approach can equip students with the skills needed for lifelong learning (Tsulaia, 2022).

Table 6. Pre-service Teachers' Level of Cognition in Teaching Grammar in terms of the Importance of Grammatical Terminology (Metalanguage)

	Indicators	Mean	Descriptive Interpretation
1.	Teachers should use grammatical terms to explain grammar rules to students.	4.22	very high level of cognition
2.	Students should be able to use the common grammatical terms in English correctly when discussing grammar.	4.32	very high level of cognition
3.	Students should understand the common grammatical terms in English.	4.44	very high level of cognition
	Average	4.33	Pre-service teachers' cognition in teaching grammar is very high in terms of importance of Grammatical Terminology (Metalanguage)

Legend: 1.00-1.79= Very low; 1.80-2.59= Low; 2.60-3.39= Moderate; 3.40-4.19= High; 4.20-5= Very high

Table 6 shows the mean distribution of the respondents in the Importance of Grammatical Terminology (Metalanguage). It can be gleaned that indicator 3 got the highest mean of 4.44, which has a descriptive equivalent of a very high level of cognition in the Likert Scale, and indicator 1 got the lowest mean of 4.22, which has a descriptive equivalent of very high level of cognition. The overall mean was posted at 4.33, with a descriptive interpretation of a very high level of cognition on the scale. Little knowledge of grammatical terminologies (metalanguage) makes grammar explanations hard to comprehend (Clifton, 2019). Berry (2008) wrote that grammatical terminology provides learners and teachers a quick and easy way to denote grammatical elements.

Table 7. Pre-service Teachers' Level of Cognition in Teaching Grammar in terms of Value of Drilling

	Indicators	Mean	Descriptive Interpretation
1.	Drilling and memorization are essential to the successful learning of new language forms.	4.18	high level of cognition
2.	Mechanical drilling is of no value in English teaching.	3.51	high level of cognition
3.	Teachers should ask students to practice new grammatical structures.	4.17	high level of cognition
	Average	3.95	Pre-service teachers' cognition in teaching grammar is high in terms of Value of Drilling

Legend: 1.00-1.79= Very low; 1.80-2.59= Low; 2.60-3.39= Moderate; 3.40-4.19= High; 4.20-5= Very high

Table 7 shows the mean distribution of the respondents in Value of Drilling. It can be gleaned that indicator 1 got the highest mean with 4.18, which has a descriptive equivalent of a high level of cognition in the Likert Scale, and indicator 2 got the lowest mean with 3.51, which has a descriptive equivalent of a high level of cognition. The overall mean was posted at 3.95, with a descriptive interpretation of a high level of cognition on the scale. If drilling is used appropriately, it can be productive and proactive for students to memorize and retain vocabulary and structural context within a sentence (Pachina, 2019). Additionally, drilling techniques could increase junior high school students' mastery of English vocabulary (Fransiska, 2016).

Table 8. Difference in Pre-service Teachers' Level of Cognition in Teaching Grammar by Age

Factors	Age	N	Median	H	df	Asymp. Sig	Conclusion
Focus on forms Instruction (Rules)	19 and below	20	3.83	7.016	3	.071	Not Significant
	20-24	86	4.00				
	25-29	6	4.17				
	30 and above	2	3.17				
Focus on form Instruction (context and meaning)	19 and below	20	4.00	3.628	3	.305	Not Significant
	20-24	86	4.00				
	25-29	6	4.40				
	30 and above	2	4.40				
Deductive Approach	19 and below	20	4.10	2.557	3	.465	Not Significant
	20-24	86	4.60				
	25-29	6	4.60				
	30 and above	2	4.10				
Inductive Approach	19 and below	20	3.90	1.367	3	.713	Not Significant
	20-24	86	4.00				
	25-29	6	4.40				
	30 and above	2	3.80				
Importance of Grammatical terminology (Metalanguage)	19 and below	20	4.33	1.210	3	.751	Not Significant
	20-24	86	4.33				
	25-29	6	4.50				
	30 and above	2	4.00				
Value of drilling	19 and below	20	4.00	1.333	3	.721	Not Significant
	20-24	86	4.00				
	25-29	6	4.17				
	30 and above	2	3.33				

Table 8 shows the evaluation of the difference in the pre-service teachers' level of cognition in teaching grammar by age group using the Kruskal-Wallis H test. The test found no statistically significant difference among age groups in terms of focus on forms instruction (prescriptive) [H(3) =7.016, p =.071], with a median value of 3.83 for those aged 19 and below, 4.00 for those aged 20–24, 4.17 for those aged 25–29, and 3.17 for those aged 30 and above; in terms of focus on form instruction (descriptive) [H(3) =3.628, p =.305], with a median value of 4.00 for those aged 19 and below, 4.00 for those aged 20–24, 4.40 for those aged 25–29, and 4.40 for those aged 30 and above; in terms of deductive approach [H(3) =2.557, p =.465], with a median value of 4.10 for those aged 19 and below, 4.60 for those aged 20–24, 4.60 for those aged 25–29, and 4.10 for those aged 30 and above; in terms of inductive approach [H(3) =1.367, p =.713], with a median value of 3.90 for those aged 19 and below, 4.00 for those aged 20–24, 4.40 for those aged 25–29, and 3.80 for those aged 30 and above; in terms of importance of grammatical terminology [H(3) =1.210, p =.751], with a median value of 4.33 for those aged 19 and below, 4.33 for those aged 20–24, 4.50 for those aged 25–29, and 4.00 for those aged 30 and above; and lastly, in terms of value of drilling [H(3) =1.333, p =.721], with a median value of 4.00 for those aged 19 and below, 4.00 for those aged 20–24, 4.17 for those aged 25–29, and 3.33 for those aged 30 and above at the 5% significance level. The result implies that age does not significantly influence the factors in pre-service teachers' level of cognition in teaching grammar. Regardless of age, teachers' levels of cognition in grammar teaching are expected to be similar or unaffected by this factor. The finding supports the study of Merisi and Pillay (2020), which states that age does not influence teachers' level of cognition but their experiences of the pedagogic practices in their schools.

Table 9. Difference in Pre-service Teachers' Level of Cognition in Teaching Grammar by Gender

Factors	Gender	n	Mdn	H	df	Sig.	Conclusion
Focus on forms Instruction (Rules)	Male	31	4.00	.376	2	.829	Not Significant
	Female	78	4.00				
	Prefer not to say	5	4.00				

Factor	Gender	n	Median	H	df	Asymp. Sig	Conclusion
Focus on form Instruction (Context and meaning)	Male	31	4.00	.503	2	.778	Not Significant
	Female	78	4.00				
	Prefer not to say	5	4.00				
Deductive Approach	Male	31	4.60	.060	2	.970	Not Significant
	Female	78	4.40				
	Prefer not to say	5	4.40				
Inductive Approach	Male	31	4.00	.978	2	.613	Not Significant
	Female	78	4.00				
	Prefer not to say	5	4.00				
Importance of Grammatical terminology	Male	31	4.33	2.237	2	.327	Not Significant
	Female	78	4.17				
	Prefer not to say	5	4.67				
Value of drilling	Male	31	3.67	.437	2	.804	Not Significant
	Female	78	4.00				
	Prefer not to say	5	4.00				

Table 9 reveals the difference in the pre-service teachers' level of cognition in teaching grammar by gender group using the Kruskal-Wallis H test. The test found no statistically significant difference among gender groups in terms of focus on forms instruction (prescriptive) [H(2) =.376, p =.829], with a median value of 4.00 for males, 4.00 for females, and 4.00 for those who prefer not to say; in terms of focus on form instruction (descriptive) [H(2) =.503, p =.778], with a median value of 4.00 for males, 4.00 for females, and 4.00 for those who prefer not to say; in terms of deductive approach H(2) =.060, p =.970], with a median value of 4.60 for males, 4.40 for females, and 4.40 for those who prefer not to say; in terms of inductive approach [H(2) =.978, p =.613], with a median value of 4.00 for males, 4.00 for females, and 4.00 for those who prefer not to say; in terms of importance of grammatical terminology [H(2) =2.237, p =.327], with a median value of 4.33 for males, 4.17 for females, and 4.67 for those who prefer not to say; and lastly, in terms of value of drilling [H(2) =.437, p =.804], with a median value of 3.67 for males, 4.00 for females, and 4.00 for those who prefer not to say at the 5% significance level. It suggests that gender does not significantly influence the factors in pre-service teachers' level of cognition in teaching grammar. Regardless of gender, pre-service teachers' perspectives in teaching grammar are expected to be similar or unaffected by this factor. According to Merisi and Pillay (2020), what influences teacher's level of cognition are their experiences of the pedagogic practices in their schools. However, Kaymakamoglu (2015) revealed more significant similarities between male and female teachers regarding their teaching practices than their beliefs.

Furthermore, it was observed that male teachers exhibited a higher level of consistency between their beliefs and practices compared to their female counterparts.

Table 10. Difference in Pre-service Teachers' Level of Cognition in Teaching Grammar by Year Level

Factors	Year Level	n	Median	H	df	Asymp. Sig	Conclusion
Focus on forms Instruction (Rules)	Second Year	36	4.00	3.698	2	.157	Not Significant
	Third Year	61	4.00				
	Fourth Year	17	4.33				
Focus on form Instruction (Context and Meaning)	Second Year	36	4.00	5.553	2	.062	Not Significant
	Third Year	61	4.00				
	Fourth Year	17	4.40				
Deductive Approach	Second Year	36	4.20	4.361	2	.113	Not Significant
	Third Year	61	4.40				
	Fourth Year	17	4.80				
Inductive Approach	Second Year	36	3.80	4.091	2	.129	Not Significant
	Third Year	61	4.00				
	Fourth Year	17	4.40				
Importance of Grammatical terminology	Second Year	36	4.33	.763	2	.683	Not Significant
	Third Year	61	4.33				
	Fourth Year	17	4.67				
Value of drilling	Second Year	36	3.83	1.791	2	.408	Not Significant
	Third Year	61	4.00				

Fourth Year	17	4.33

Table 10 depicts the evaluation of the difference in the pre-service teachers' level of cognition in teaching grammar by year level group using the Kruskal-Wallis H test. The test found no statistically significant difference among year levels in terms of focus on forms instruction (prescriptive) [H(2) =3.698, p =.157], with a median value of 4.00 for the second-year, 4.00 for the third-year, and 4.33 for the fourth-year group of students; in terms of focus on form instruction (descriptive) [H(2) =5.553, p =.062], with a median value of 4.00 for the second-year, 4.00 for the third-year, and 4.40 for the fourth-year group of students; in terms of deductive approach H(2) =4.361, p =.113], with a median value of 4.20 for the second-year, 4.40 for the third-year, and 4.80 for the fourth-year group of students; in terms of inductive approach [H(2) =4.091, p =.129], with a median value of 3.80 for the second-year, 4.00 for the third-year, and 4.40 for the fourth-year group of students; in terms of importance of grammatical terminology [H(2) =.763, p =.683], with a median value of 4.33 for the second-year, 4.33 for the third-year, and 4.67 for the fourth-year group of students; and lastly, in terms of value of drilling [H(2) =1.791, p =.408], with a median value of 3.83 for the second-year, 4.00 for the third-year, and 4.33 for the fourth-year group of students at the 5% significance level. The year level does not significantly influence the pre-service teachers' level of cognition. The results imply that whether the pre-service teachers are in higher or lower year levels, their cognition on how grammar should be taught remains relatively consistent. Many things influence pre-service teachers' beliefs, including external and internal influences (Hu & Liu, 2021). The result of the study contradicts numerous research findings that highlight that pre-service teachers' beliefs change over time, particularly the findings of Dincer (2020), which states that future English teachers at the graduate level had a more systems-oriented view of grammar. Relevantly, Onalan (2018) says that teachers with higher English proficiency levels and higher degrees (master's/doctorate) showed stronger beliefs towards teaching grammar indirectly.

Table 11. Relationships Between Factors Affecting Pre-service Teachers' Level of Cognition in Teaching Grammar

Factors	1	2	3	4	5	6
1. Focus on forms Instruction (Rules)	-					
2. Focus on form Instruction (Context and Meaning)	.514**	-				
3. Deductive Approach	.494**	.544**	-			
4. Inductive Approach	.530**	.621**	.543**	-		
5. Importance of Grammatical terminology (Metalanguage)	.516**	.413**	.651**	.526**	-	
6. Value of drilling	.604**	.473**	.473**	.592**	.467**	-

Note: **p < .01

Table 11 illustrates the relationship between factors affecting the pre-service teachers' level of cognition in teaching grammar. The Spearman rho correlation revealed that there was a significant, moderate positive correlation (Schober, P. et al., 2018) between focus on forms instruction (prescriptive) and focus on form instruction (descriptive) [r_s(112) =.514**, p < .05] with a large effect size relationship, a deductive approach [r_s (112) =.494**, p< .05] with a medium effect size relationship, an inductive approach [r_s(112) =.530**, p< .05] with a large effect size relationship, the importance of grammatical terminology [r_s(112) =.516**, p< .05] with a large effect size relationship, and value of drilling [r_s112) =.604**, p< .05] with a large effect size relationship (Cohen, 1988). The respective coefficient determination (R^2) indicates that 26.42% of the variance of focus on forms instruction (prescriptive) was explained by the presence of focus on form instruction (descriptive), 24.40% by the presence of a deductive approach, 28.09% by the presence of an inductive approach, 26.63% by the importance of grammatical terminology, and 36.48% by the presence of the value of drilling, and vice versa. The result means that changes in one factor can influence other factors, leading teachers to adapt and refine their instructional approaches. Mallia (2014) wrote that both deductive and inductive approaches can be employed successfully in grammar teaching, with the key factors using concrete examples and ensuring relevance to the learners' local context. Furthermore, Tammenga-Helmantel et al. (2014) indicated that any form of grammar instruction, whether explicit or non-explicit, is more effective than no intervention or exposure to grammar.

The table also revealed that there was a significant moderate positive correlation (Schober, P. et al., 2018) between focus on form instruction (descriptive) and deductive approach [r_s(112) =.544**, p< .05] with a large effect size relationship, an inductive approach [r_s(112) =.621**, p< .05] with a large effect size relationship, the importance of grammatical terminology [r_s(112) =.413**, p< .05] with a medium effect size relationship, and the value of drilling [r_s(112) =.473**, p< .05] with a medium effect size relationship (Cohen, 1988). The respective coefficient determination (R^2) indicates that 29.59% of the variance of focus on form instruction (descriptive) was explained by the presence of a deductive approach, 38.56% by the presence of an inductive approach, 17.06% by the importance of grammatical terminology, and 22.37% by the presence of the

value of drilling, and vice versa. The correlations emphasize their influence and collective significance in improving the understanding of grammar instruction. Focus on Forms instruction emphasizes teaching grammar through explicit instruction, focusing on specific language structures. It complements the focus on form instruction, encouraging learners to notice grammar in context. Some agreement exists that the most effective grammar teaching includes some deductive and inductive characteristics (Haight et al., 2007). Utilizing metalanguage aids learners in understanding grammar rules (Warson et al., 2021). Drilling can be an excellent way to support students' learning process and to help learners internalize particular structures of the target language in an effortless way (Wostiera, 2020)

It also shows a significant moderate positive correlation (Schober, P. et al., 2018) between deductive approach and inductive approach [$r_s(112)$ =.543**, p< .05] with a large effect size relationship, the importance of grammatical terminology [$r_s(112)$ =.651**, p< .05] with a large effect size relationship, and the value of drilling [$r_s(112)$ =.473**, p< .05] with a medium effect size relationship (Cohen, 1988). The respective coefficient determination (R^2) indicates that 29.48% of the variance of the deductive approach was explained by the presence of an inductive approach, 42.38% by the importance of grammatical terminology, and 22.37% by the value of drilling, and vice versa. The effectiveness of the deductive approach in language learning can be significantly improved by incorporating an inductive approach, giving importance to grammatical terminology, and implementing drilling activities. Watcharakorn (2018) revealed compelling evidence that when inductive approaches are combined with deductive approaches, they will exhibit positive outcomes in learning endeavors. Also, based on the study of Zhang and Sun (2022), the inclusion of terminology in classroom instruction improves students' comprehension and application of grammar points, while drilling techniques employed by teachers facilitate adequate comprehension of these points. Therefore, all of these significantly boost the efficacy of the deductive approach.

The Spearman rho correlation also revealed that there was a significant moderate positive correlation (Schober, P. et al., 2018) between an inductive approach and the importance of grammatical terminology [$r_s(112)$ =.526**, p< .05] with a large effect size relationship, and the value of drilling [$r_s(112)$ =.592**, p< .05] with a large effect size relationship (Cohen, 1988). The respective coefficient determination (R^2) indicates that 27.67% of the variance of the inductive approach was explained by the importance of grammatical terminology, 35.05% by the presence of the value of drilling, and vice versa. The result implies that utilizing grammatical terminology and implementing drilling activities can improve the efficacy of the inductive approach in language learning.
The correlation between the inductive approach, the importance of grammatical terminology, and the value of drilling in teaching grammar is essential for effective

language instruction. The inductive approach encourages learners to discover grammar rules through context and examples, promoting a deeper understanding. Grammatical terminology provides a common language for discussing language structures, aiding comprehension. Drilling reinforces learned grammar concepts, enhancing retention and application. As Hinkel (2006) supported, this integrated approach facilitates language learners' proficiency and accuracy in practical usage.

Lastly, there is a significant moderate positive correlation (Schober, P. et al., 2018) between the importance of grammatical terminology and the value of drilling [$r_s(112)$ =.467**, p< .05] with a medium effect size relationship. The coefficient determination (R^2) indicates that the presence of the value of drilling and vice versa explained 21.81% of the variance of the importance of grammatical terminology. The result implies that drilling activities can improve comprehension and recognition of grammatical terminology while emphasizing that understanding and appreciation can enhance the value of drilling activities. The correlation between metalanguage and drilling in teaching grammar lies in the effectiveness of using explicit linguistic terms (metalanguage) during drilling exercises to enhance language learning. By providing clear explanations and grammar rules labels, students can better grasp structures and apply them accurately (Thornbury, 2005).

4. Conclusion

Based on the data gathered, tabulated and analyzed, the researchers concluded that the respondents were females, 20-24 years old, and third-year students in the College of Education Arts and Sciences. The respondents have a high level of cognition in terms of Focus on FormS Instruction (rules), Focus on Form Instruction (context and meaning), Inductive Approach and Drilling, while very high in Deductive Approach and Metalanguage. Also, there was no significant difference in respondents' level of cognition in teaching grammar in terms of age, gender, and year level. Thus, it shows positive correlations between the factors affecting their cognition in teaching grammar. Lastly, the results suggest that a skills refinement plan can be a useful tool for assisting pre-service teachers in realizing their full potential as grammar teachers.

5. Recommendation

In view of the conclusions drawn, the following recommendations are proposed by the researchers:
1. The English department should develop a skills refinement plan that focuses on arriving at the most creative and innovative language teaching approaches, methods, and strategies.
2. Implementation of 'ENGLISH ONLY' policy for English major students.
3. Monthly language teaching seminar/workshop for pre-service teachers to improve their language fluency, accuracy, proficiency and mastery.

4. Frame a descriptive plan to identify effective and ineffective teaching and learning approaches, methods, and strategies used by pre-service teachers, as well as the challenges and opportunities they encountered in teaching grammar.

5. Conduct further research and studies in this field.

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