Questions Teachers Ask: An Exploratory Study of Teachers' Approach to Questioning in the Primary and Secondary Classroom

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Abstract

This quantitative study investigated teacher questioning patterns and behaviours at the primary and secondary levels of the education system. One hundred and fifty-seven (157) teachers were randomly drawn from Infants to Standard 5 classes in the primary school system and Forms 1to 6 in secondary schools of Trinidad. One-way ANOVA and t-tests were used to analyze teacher responses to thirty (30) questions on a 5-point Likert-type scale. These tests were done on the basis of a probability of error threshold of 1 in 20, or p< .05.Cronbach's alpha was used to measure internal consistency or reliability for 25 items used in the Likert scale. The result was .853, which indicates a high level of internal consistency. Findings of the study revealed that despite their reported high levels of confidence in asking both convergent and divergent questions, teachers who operate in high-stakes examination classes tend to ask low-level cognitive questions that require factual information rather than higher-order questions that stimulate lively classroom discussion. The study also showed some disconnect between teachers' reported high levels of confidence in asking divergent questions and their ability to provide satisfactory written samples of critical thinking questions.

Keywords: questions teachers ask; teacher questioning behaviors and patterns; divergent and convergent questions; classroom discussion; critical thinking.

1. Introduction

Questioning is regarded as an integral part of the teaching and learning process. Early research on teacher questioning behaviours and patterns indicate that teachers spend approximately 80% of the school day askingas many as 300-400 questions to students (Stevens, 1912; Leven & Long, 1981). However, some contemporary educators spend a more conservative 35%-50% of their instructional time asking questions. Regardless of the amount of time spent on questioning, educators generally believe that effective questioning fosters interaction between teachers and students, while facilitating student understanding of concepts taught in the classroom (Fusco, 2012; Morgan & Saxton, 1991).

Recent research also highlights the value of questioning as an important teaching and learning tool (Walsh & Sattes, 2015; Pedrosa-de-Jesus, Moreira, da Silva Lopes, & Watts, 2014; Tofade, Elsner & Haines, 2013; Albergaria-Almeida, 2010; Di Teodoro, Donders, Fleming, Kemp-Davidson & Robertson, 2011;Pedrosa-de-Jesus, da Silva Lopes, Moreira, & Watts, 2012; Chin & Osborne, 2008; Almeida, Pedrosa de Jesus & Watts, 2008; Graesser & Olde, 2003). This particular study explores teachers' attitude and approach to questioning, and more specifically, the types of questions they ask to stimulate student discussion and critical thinking in the classroom.

2.Literature Review

2.1 Purpose of questioning

Teacher questions serve various purposes and provide opportunities for student engagement in the classroom (Dickinson, 2006; Curenton & Justice, 2004; Kintsch, 2005). Very often teachers use questioning merely to moderate students' behaviour, check students' class work, review or summarize lessons, and evaluate students' learning (Black, 2001; Goodman & Berntson, 2000; Morgan & Saxton, 1991; Ellis, 1993; Wilen, 1985). Heritage (2013) agrees that pedagogic questioning can provide useful assessment data about student learning.

Using the standard classroom transaction model of initiation-response-evaluation (IRE), teachers assess where students are so that they can plan the next steps in the learning and teaching process (William, 2014). However, this standard questioning model has been criticized largely because teachers who do not carefully plan questions before-hand run the risk of making false assumptions about student understanding of concepts taught in the classroom. William (2014) believes that this is likely to happen when teachers ask specific questions to a few random students who provide the answers they expect to hear.

However, questioning can do much more for students in terms of developing their critical thinking skills, motivating them to pay attention and learn, increasing inquiry and investigative skills, and deepening their cumulative knowledge base (Black, 2001; Goodman & Berntson, 2000). For example, focusing questions serve to focus student attention on the day's lesson. They are also used to determine what students have learnt, to motivate and arouse student interest at the start of or during the lesson, or to check student understanding of the concept during or at the end of a lesson. While prompting questions use hints and clues to aid students in answering questions or to assist them in correcting an initial response, probing questions are used to develop clarification and critical awareness, or refocus a response to the question. Using the technique of redirecting, the teacher asks several students to respond to the same question based on previous responses from other classmates. This method is a good way for a teacher to build broader participation among students in classroom discussions (Moore, 2007).

2.2 Socratic questioning

Paul and Elder (2008), identify three broad categories of Socratic questioning (spontaneous, exploratory and focused) which can be used also to support critical thinking and active classroom discussion. They suggest that spontaneous Socratic discussions are useful when students become interested in a topic; when they raise an important issue or when they are on the brink of grasping or integrating new insight. Exploratory Socratic questioning is used to identify where students are clear or fuzzy in their thinking; and can be useful also for introducing a topic or reviewing content. Focused questioning presents opportunities for students to engage in extended discussion where they discover, develop and share ideas in a group setting. While there is no one best question that can used in any given situation, there is consensus among educators that effective questioning requires pre-planning; and when used to stimulate discussion, effective questioning has the potential to move students from passive participants to active meaning makers (Paul & Elder, 2008; Walsh & Sattes, 2015).

2.3 Questioning for classroom discussion

Questions for class discussion are divergent (open to different interpretations and conclusions) not convergent (closed to one 'right answer'). According to Walsh and Sattes (2015), divergent questions "engage students in higher-level processing of information moving beyond the mere regurgitation of textbook or teacher answers" (p.7). However, to achieve this ideal, teachers must take time to practice skillful questioning. It is well-known that properly- formulated questions generate discussion and promote interest in the subject matter, while poorly-constructed questions create confusion in the minds of the learners and limit creative thinking (Tofafe et al., 2013). Contemporary teacher education programmes stress the value of high-level cognitive questions (open-ended, interpretative, evaluative, inquiry, inferential and synthesis) in developing problem-solving and critical-thinking skills in students. However, according to Fisher and Frey (2011), teachers should not eliminate knowledge, comprehension, or application questions that provide students with factual information to tackle complex questions. Educators agree that it is appropriate to ask questions to address all cognitive domains provided that the desired learning outcome is kept in mind and a good mix of questions is used during each teaching session (Christen bury & Kelly, 1983; Tofade et al., 2013). While a combination of higher-order and lower-order questions is suggested as an effective method, studies have shown that many teachers spend most of their time asking mainly low-level cognitive questions, which require students to recall facts, rather than higher-order questions, which stimulate lively classroom discussion (Phillips & Duke, 2001; Sellappah, Hussey, Blackmore & McMurray, 1998; Wilen, 1991, 2001).This current study investigates the extent to which teachers engage in higher-order cognitive questions to stimulate classroom discussion and bolster critical thinking among students in the Trinidad primary and secondary classrooms.

3. Purpose of the study

The purpose of this study was to explore teacher questioning behaviours and patterns in primary and secondary classrooms of Trinidad. Three research questions set the parameters for this study:

1. What types of questions do teachers ask for student discussion in the primary and secondary classrooms?
2. Is there a difference between teachers' experience in teaching and the types of questions they ask for student discussion in the classroom?
3. Is there a difference between teachers' qualifications and the types of questions they ask for student discussion in the classroom?

4. Theoretical Framework

The theoretical framework of the study is informed by early works done by Stevens (1912) and Long (1981) on teacher questioning behaviors' and patterns. The research is also influenced by recent studies conducted by Walsh and Sattes (2015) on questioning for classroom discussion. The study is also influenced by Socratic epistemology seen in the works of Paul and Elder (2008).

5. Methodology

5.1 Participants

A random sample of 157teacherswas selected to participate in the study. These respondents taught at all levels of the primary and secondary school systemin Trinidad. Both male and female participants were classified into three groups based on their teaching experience. Those who taught for 0-4 years were regarded as novice teachers; those with 5-20 years were classified as developing professionals; and those who taught for over 20 years were considered veteran teachers.

5.2 Instrument

This study utilized a survey instrument with 30 items covering three objectives arising from the research questions outlined above. Using a 5-point Likert-type scale, respondents were asked to express their opinions about their questioning patterns and behaviors. The instrument was pilot-tested and feedback from that activity was used to improve the instrument before formally distributing the questionnaires to the research sample. Cronbach's alpha was used to measure internal consistency or reliability for 25 of the items used in the Likert scale. The result was .853, which indicates a high level of internal consistency for the items used in the scale.

5.3 Procedure and Analyses

Quantitative data analysis for this study was done with the aid of the Statistical Package for the Social Sciences (SPSS) software. Using the SPSS software, variables were put in the correct form and checks were made for missing values. Data from the primary school teachers were grouped according to class levels (infants to standard five) to assist in easy analysis of the types of questions teachers asked students at these levels. The secondary school data were grouped also according to class levels (form one to sixth form). This procedure was useful in assisting the researcher to find out the extent to which pedagogic questions varied over the period of matriculation from primary school infants to sixth form at the secondary school level.

One-way ANOVA tests were used to analyze teacher responses to Research Question 1, which asked about the different types of questions teachers ask for student discussion in the primary and secondary classrooms. Independent Samples t-tests were used for Research Questions 2 and 3, to explore differences between teachers' qualifications as well as experience in teaching and the types of questions they ask for student discussion in the classroom. These tests of significance (one-way ANOVA and independent samples t-tests) were done on the basis of a probability of error threshold of 1 in 20, or $p<.05$.

6. Results

One hundred and fifty-seven (157) primary and secondary school teachers participated in a survey which required them to express their opinions about their questioning patterns and behaviours. These participants were located in primary schools (59.9%) as well as secondary schools (40%) in Trinidad. As shown in Table 1, the majority of participants, 67.5%, (n= 106) were females, while 29.9%, (n= 47) were males. The sample was categorized according to teaching experience as shown in Table 1. The majority of teachers, 50.9% (n=80), were identified as *developing professionals* while *veteran teachers* represented 32.5% (n=51) and *novice teachers* comprised 14.6% (n=23) of the sample. Data were also collected on the academic and professional qualifications of teachers. As shown in Table 1, the majority (75.2%) of the participants possessed undergraduate degrees, while 16.6% possessed certification at the master's level with only 1.9% of the participants possessing a PhD or other professional qualifications. Only 3.8% of the sample possessed a technician's diploma.

It must be noted that approximately 63% of the sample had a combination of academic and professional teacher education qualifications.

Table 1. Demographic Data on Participants

Demographic	N (%)
Gender	
Male	47 (29.9)
Female	106 (67.5)
Missing	4 (2.5)
Level of Teaching	
Primary School (Infants –Standard One)	36 (22.9)
Primary School (Standard Two-Three)	25 (15.9)
Primary School (Standard Four –Five)	32 (20.4)
Secondary School (Form One –Three)	15 (9.6)
Secondary School (Form Four-Five)	31 (19.7)
Secondary School (Sixth Form)	16 (10.2)
Missing	2 (1.3)
Teaching Experience	
Novice (0-4 years)	23 (14.6)
Developing Professional (5-20 years)	80 (50.9)
Veteran (>20 years)	51 (32.5)
Missing	3 (1.9)
Academic & Professional Qualifications	
Master's Degree	13 (8.3)
Master's Degree & Dip. Ed/Teachers' Dip.	13 (8.3)
BA/BSc Degree	31 (19.7)
BA/BSc Degree & Dip. Ed/Teachers' Dip.	26 (16.6)
B. Ed. Degree	61 (38.9)
Technician's Diploma	6 (3.8)
Other	3 (1.9)
Missing	4 (2.5)

Table 2 provides asample of the Likert-type scale used to record the level of frequency certain types of questions were asked to students in the primary and secondary classroom.

Table 2. Survey Items and Teachers' Responses

Survey Questions	**Teachers' Responses/157**				
	Never	**Rarely**	**Sometimes**	**Often**	**Always**
5. I challenge my students by asking questions that arouse their curiosity.			22	78	48
6. I ask questions to establish a foundation formy work.	2	2	17	66	62
7. I ask questions to encourage students to listen to each other's opinions.	1	3	15	79	50
8. I ask questions so that students can interpret, analyze and think critically.		1	23	64	59
9. I ask questions to build class rapport.	1	6	39	57	46
10. I ask questions to discover special interests in my students.		5	35	60	49
11. I pre-plan key questions I want to ask during the lesson.	1	13	49	42	44
12. I just let questions naturally flow during the lesson.		8	55	58	28

13. I provide wait time of about 3 to7 seconds after questions.	2	10	33	46	54
14. I ask questions both to students who volunteer to answer and to those who do not.	1	1	14	47	86
15. I redirect questions to various students to get diverse answers or opinions.		1	23	56	68
16. I allow for multiple responses to my questions.		3	18	65	62
17. I encourage students to speak to each other when responding to my questions.	**7**	25	66	32	18
18. I use verbal rewards when students respond to my questions.		4	28	51	64
19. I use verbal sanctions when students respond to my questions.	**7**	18	49	35	36
20. I remain neutral when students respond to my questions.	18	24	51	23	28
21. I use questions to help students modify their responses.	1	3	30	74	39
22. I ask a question before designating a respondent.	1	4	40	58	46
23. I avoid asking one-word-answer questions.	1	6	30	66	46
24. I encourage students to ask questions in class.	1	1	26	32	89
25. After the lesson, I evaluate the success of the questions I asked.		5	32	41	70

Research Question 1

What types of questions do teachers ask for student discussion in the primary and secondary classrooms?

Hypothesis Testing

Research Question 1 was tested through the following hypothesis:

Hypothesis 1: *There is no difference in the types of questions teachers ask for student discussion in the primary and secondary classrooms.*

This hypothesis was tested using one-way analysis of variance (ANOVA) with data from survey items 5, 7-10, 15-17, 21, 23-24.These survey items represent divergent questions that are appropriate for generating classroom discussion. Table 3 illustrates findings for this hypothesis.

Table 3. One-Way ANOVA of the Types of Questions Teachers ask for Discussion in the Primary and Secondary Classrooms

Survey item	Source	Sum of Squares	df	Mean Square	F	Sig.
5	Between Groups	6.981	5	1.396	3.392	.006*
	Within Groups	58.452	142	.412		
7	Between Groups	4.526	5	.905	1.671	.145
	Within Groups	76.906	142	.542		
8	Between Groups	6.326	5	1.256	2.484	.034*
	Within Groups	71.810	141	.509		
9	Between Groups	6.609	5	1.322	1.703	.138
	Within Groups	110.961	143	.776		
10	Between Groups	6.259	5	1.252	1.834	.110
	Within Groups	97.633	143	.683		
15	Between Groups	2.871	5	.574	1.024	.406
	Within Groups	79.636	142	.561		
16	Between Groups	1.315	5	.263	.461	.804
	Within Groups	80.928	142	.570		
17	Between Groups	6.957	5	1.391	1.369	.240
	Within Groups	144.360	142	1.017		
21	Between Groups	2.657	5	.531	.858	.511
	Within Groups	87.343	141	.619		
23	Between Groups	8.521	5	1.704	2.426	.038*
	Within Groups	100.472	143	.703		
24	Between Groups	7.319	5	1.464	2.134	.065
	Within Groups	98.104	143	.686		

* Significant at the 0.05 level (2-tailed).

Table 4. Tukey's Post-Hoc Test of the Types of Questions Teachers ask for Discussion in the Primary and Secondary Classrooms

Level of Teaching	Mean Difference	Std. Error	Sig.
Secondary School (Form 1-3)	.667*	.197	.012
Primary School (Infants – Standard 1	-.667*	.197	.012
Secondary School (Form 1-3)	.700*	.203	.009
Primary School (Standard 4-5)	-.700*	.203	.009

Survey item 5= I challenge my students by asking questions that arouse their curiosity.
*The mean difference is significant at the 0.05 level.

The implied null hypothesis is rejected with regard to survey item5. Tukey's post-hoc procedure indicates that teachers who teach at the Forms 1-3 levels in secondary schools, ask questions that arouse students' curiosity more than those teachers who operate in primary schools at the Infants level as well as Standard 1, 4 and 5 levels.

Level of Teaching	Mean Difference	Std. Error	Sig.
Secondary School (Sixth Form)	-.670*	.234	.05
Primary School (Standard 2-3)	.670*	.234	.05

Survey item 8= I ask questions so that students can interpret, analyze and think critically.
*The mean difference is significant at the 0.05 level.
With regard to survey item 8, the implied null hypothesis is rejected. Teachers who teach at the sixth form level in the secondary school system are less inclined than those who teach Standard 2-3 in primary schools to ask questions to encourage students to interpret, analyze and think critically.

Level of Teaching	Mean Difference	Std. Error	Sig.
Secondary School (Form 1-3)	.900*	.265	.011
Primary School (Standard 4-5)	-.900*	.265	.011

Survey item 23= I avoid asking one-word-answer questions.
*The mean difference is significant at the 0.05 level.

The null hypothesis is also rejected with regard to survey item 23. Tukey's post-hoc procedure indicates thatteachers who teach Forms 1-3 in secondary schools avoid asking students one-word-answer questions more than those who teach primary school students at the Standard 4 and 5 levels.

Research Question 2

Is there a difference between teachers' experience in teaching and the types of questions they ask for student discussion in the classroom?

Hypothesis Testing

Research Question 2 was tested through the following hypothesis: Hypothesis 1*: There is no difference in teachers' experience in teaching and the types of questions they ask for classroom discussion.*
The null hypothesis was tested using an independent samples t-test to compare the teaching experience of two groups of teachers (developing professionals and veterans) and the types of questions they ask for classroom discussion.

Table 5. Independent Samples t-test for Differences between Teachers' Experience in Teaching and the Types of Questions they ask for Classroom Discussion

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	95% Confidence interval of the Difference	
								Lower	Upper
Equal Variances assumed	1.277	.266	-3.636	38	.001	-.783	.215	-1.220	-.347
Equal variances not assumed			-3.592	36.824	.001	-.783	.218	-1.227	-.340

Survey item 17= I encourage students to speak to each other when responding to my questions
*The mean difference is significant at the 0.05 level (2-tailed).

The null hypothesis was rejected for this one significant relationship. As shown in Table 5, the analysis yielded one significant difference between veteran teachers and those who are developing professionals in the field. The results of this test indicate that both developing professionals and veteran teachers encourage their students to speak to each other when responding to questions asked in class. This suggests a level of interaction that augurs well for classroom discussion.

Research Question 3

Is there a difference between teachers' qualifications and the types of questions they ask for student discussion in the classroom?

Hypothesis Testing

Research Question 3 was tested through the following hypothesis: Hypothesis 1*: There is no difference between teachers' qualifications and the types of questions they ask for student discussion in the classroom*

The null hypothesis was tested using an independent samples t-test to compare the qualifications of two groups of teachers (those who have a Bachelor's degree with additional qualifications in teaching or education and those who possess only a technician's diploma) and the types of questions they ask for classroom discussion.

Table 6a. Independent Samples t-test for Differences between Teachers' Qualifications and the Types of Questions they ask for Classroom Discussion

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	95% Confidence interval of the Difference	
								Lower	Upper
Equal variances assumed	1.333	.258	2.349	29	.026	1.031	.439	.133	1.928
Equal variances not assumed			1.705	4.620	.154	1.031	.605	-.563	2.624

Survey item 9 = I ask questions to build class rapport.

*The mean difference is significant at the 0.05 level (2-tailed).

The null hypothesis was rejected for this one significant relationship. As shown in Table 6a, this analysis yielded one significant difference between teachers who have a Bachelor's degree with additional qualifications in teaching or education and those who possess qualifications at the level of a technician's diploma. The results of this test indicate that persons with teacher education training (as evidenced by either a technician's diploma or a diploma in education or teaching) are more likely to ask questions that build class rapport than teachers with other combinations of qualifications.

Table 6b. Independent Samples t-test for Differences between Teachers' Qualifications and the Types of Questions they ask for Classroom Discussion

	Levene's Test for Equality of Variances	t-test for Equality of Means							
	F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	95% Confidence interval of the Difference	
								Lower	Upper
Equal variances assumed	.623	.432	.266	89	.791	.052	.196	-.338	.422
Equalvariancesnot assumed			.277	67.831	.783	.052	.189	-.324	.428

Survey item 9 = I ask questions to build class rapport.

*The mean difference is significant at the 0.05 level (2-tailed).

The null hypothesis was further tested using an independent samples t-test to compare the teaching experience of two additional groups of teachers and the types of questions they ask for classroom discussion. The first group comprises teachers who possess only a content degree at the Bachelor's level. The second group comprises those who possess a Bachelor of Education degree which incorporates both content and training in teaching or education). As shown in Table 6b, the implied null hypothesis is retained. With regard to the types of questions teachers ask for building class rapport, the results of this test indicate that there is no statistically significant difference between teachers who possess only a content degree at the Bachelor's level and those who possess a Bachelor of Education degree, which incorporates both content and training in teaching or education. To further probe into teacher questioning behaviors and patterns, participants were asked to report their level of confidence in asking questions for classroom discussion. Survey items 26-29 identified the following four types of questions: focusing, prompting, probing, and redirecting questions.Responses to these were based on a table which indicated 0 – 30% as *no confidence*; 40 – 80% as *moderate confidence*; and 90-100% as *complete confidence*.

Table 7. Teachers' Level of Confidence in Asking Questions in the Primary and Secondary Classrooms

Types of Questions	Teachers' Level of Confidence in their Ability to ask Questions in the Primary and Secondary Classrooms		
	No Confidence	Moderate Confidence	Complete confidence
Focusing	2%	20.3%	77.8%
Prompting		25.3%	74.7%
Probing		26.6%	73.4%
Redirecting	6%	24.5%	74.8%

As shown in Table 7, the majority of participants (over 73%) reported complete confidence in their ability to ask focusing, prompting, probing and redirecting questions to stimulate classroom discussion.

Analysis of teacher responses to open-ended survey question 30 revealed that this high level of reported confidence was not reflected in the actual examples provided. Survey item 30 asked: *If you wish to encourage students to think critically, what type of questions will you ask during any given lesson? Give at least one example.* Of the one hundred and fifty-seven (157) participants, twenty-four (15%) provided no response; fifty-three (33%) came from the secondary school system; and eighty (50%) respondents teach at primary schools. Analysis of the responses revealed that 23% of the primary school teachers and 18% of secondary school teachers provided faulty examples of critical thinking questions. This means that a total of 41% of primary and secondary teachers were unable to provide satisfactory examples of questions that stimulate critical thinking in students.
If one takes into account the 15% or 24 participants who provided no response to the question, one can reasonably assume that approximately 56% of the participants were uncertain about writing appropriate questions that encourage students to engage in critical thinking.

7. Discussion

This study explored teacher questioning behaviours and patterns by examining three main questions: (1) What types of questions do teachers ask for student discussion in the classroom? (2) Is there a difference between teachers' experience in teaching and the types of questions they ask for student discussion in the classroom? (3) Is there a difference between teachers' qualifications and the types of questions they ask for student discussion in the classroom? When teachers' responses were analyzed using one-way ANOVA tests, findings for the first research question revealed that there were significant differences in the types of questions teachers ask for student discussion in the classroom.

Tukey's post-hoc procedure was used to further analyze differences in the types of questions teachers ask. The findings revealed that teachers who teach at the Forms 1-3 levels in secondary schools avoid asking one-word questions (in preference to questions that arouse students' curiosity) more than those teachers who operate in primary schools at the Infant, Standard 1, 4 and 5 levels. Based on these findings, one can assume that teachers who operate in the high-stakes examination classes of Standard 4 and 5 are more concerned with asking questions that are applicable to the Secondary Entrance Assessment (SEA) examination rather than creating experiences that may be of interest to students. One can also assume that without the burden of any high-stakes examination at the

Form 1-3 level, teachers feel more comfortable challenging their students by asking questions that arouse their curiosity.

If one were to accept this reasoning, then how does one account for the students at the Infant and Standard 1 levels who are not preparing for high-stakes examinations? Why aren't teachers challenging these students by asking questions that arouse their curiosity? Perhaps the answer to these questions can be found in further investigation into teacher questioning behaviours and patterns at the lower levels of the primary school system.

Findings of Tukey's post-hoc test also revealed that teachers who teach at the Sixth Form (pre-university) level of the secondary school system, are less inclined to ask questions that encourage critical thinking, than those who teach at the Standard 2-3 level in primary schools. This is an interesting finding because at the Sixth Form (the highest level in the secondary school system) one would expect students to engage in critical thinking and careful analysis and interpretation of material studied. But Sixth Form (just as Standard 4 and 5) is a high-stakes examination class; and perhaps teachers are more concerned with students preparing specific material to pass the examination rather than focusing on developing critical thinking skills in these pre-university students. Based on these findings, it seems that in an effort to cover the syllabus for examinations, teachers ask low-level cognitive questions that require factual information rather than higher-order questions that stimulate lively discussion in the classroom. These findings are consistent with those of earlier studies conducted by Phillips and Duke, (2001); Sellappah, Hussey, Blackmore and McMurray (1998); and Wilen (2001); who found that many teachers spend most of their classroom time asking low-level cognitive questions rather than questions that stimulate critical thinking and classroom discussion.

The second research question explored differences in teachers' experience and the types of questions they ask for student discussion in the classroom. The null hypothesis was tested using an independent samples t-test to compare the teaching experience of two groups of teachers (developing professionals and veteran teachers) and the types of questions they ask for classroom discussion. Levene's test for equality of variances revealed one significant difference between veteran teachers and those who are developing professionals in the field. The results indicate that both developing professionals and veteran teachers encourage their students to speak to each other when responding to questions asked in class. This level of interaction is supported in the literature and endorsed by educators like Moore (2007); Walsh and Sattes (2015), who believe that when used to stimulate discussion, effective questioning helps in transforming students from passive participants to active meaning makers.

In the final research question, the null hypothesis was also tested using an independent samples t-test to compare the qualifications of two groups of teachers (those who possess a Bachelor's degree with additional qualifications in teaching and education, and those who possess only a Technician's teaching diploma) and the types of questions they ask for classroom discussion. Levene's test for equality of variances revealed one significant difference between the two groups of teachers.

The results indicate that persons with teacher education training (as evidenced by either a Technician's diploma or a diploma in education or teaching) are more likely to ask questions to build class rapport that teachers with other combination of qualifications. This suggests that there is merit in pursuing some level of pedagogical training to enhance classroom performance in the area of questioning. The results were different, however, when the null hypothesis was tested using an independent samples t-test to compare teaching experience of two additional groups of teachers. Unlike the first group of teachers who possessed only a content degree at the Bachelor's level, the second group comprised teachers who possessed a Bachelor of Education degree, which incorporates both content and training in teaching or education. Results of the Levene's test for equality of variances indicated that there was no statistically significant difference between teachers who possessed only a content degree at the Bachelor's level and those who possessed a Bachelor of Education degree.

This finding should be of particular interest to professors and instructors who prepare teachers for primary and secondary classroom teaching. Unlike the content/subject specific Bachelor's degree, the Bachelor of Education degree combines both content knowledge and pedagogical training. This means that students who pursue a Bachelor of Education degree are expected to be better equipped than those with content specific degrees to ask appropriate questions that stimulate classroom discussion. Findings of this study suggest a possible gap in the Bachelor of Education programme which needs to be filled by emphasizing a more deliberate approach to teaching questioning techniques to students preparing for classroom instruction.

In addition, professors at teacher education institutions can provide additional support to student teachers through modelling sound questioning skills during teaching sessions. Teacher questioning behaviours and patterns were further examined by asking participants to report their level of confidence in asking four specific types of questions (focusing, prompting, probing, and redirecting questions)to stimulate classroom discussion. While the majority of participants (over 73%) reported complete confidence in their ability to ask focusing, prompting, probing and redirecting questions, when asked to provide written examples of critical thinking questions, the results were disappointing. The analysis revealed that approximately 56% the participants demonstrated uncertainty about writing appropriate questions to engage students in critical thinking. This means that while the majority of teachers reported complete confidence in their ability to ask a combination of convergent and divergent questions, only approximately 44% of teachers were able to provide satisfactory examples of divergent questions that promote critical thinking in students.

This apparent disconnect between teachers' reported level of confidence in asking critical thinking questions and their ability to provide satisfactory written examples seems to be in keeping with what Lee (2009); Salteh and Sadeghi (2015), describe as a mismatch between teachers' perceptions and practices. These researchers have found discrepancies between what some teachers assert theoretically and their actual classroom practices. Based on participants' responses, it is reasonable to assume that in this current study, many teachers actually believed that they were asking divergent questions when in fact most of the time was spent on procedural, factual questions that did little to stimulate critical thinking and lively classroom discussion.

8. Conclusion

Socrates saw teaching as the art of asking questions. But art takes time to perfect. Since teachers spend the majority of the school day asking questions, it is important for them to spend time planning specific questions before-hand to encourage classroom discussion and challenge critical thinking. William (2014) believes that careful pre-planning minimizes the risk of teachers making false assumptions about student understanding of concepts taught in the classroom. This current study revealed that many practising teachers may not be trained specifically in the art of effective questioning. These findings have implications, therefore, for teacher educators to consciously teach and model good questioning techniques as part of the teacher preparation process.

9. Recommendations

- There is need for further investigation into the extent to which student teachers are exposed to robust teaching and modelling of effective questioning skills at teacher education institutions
- Further work needs to be done on the issue of teacher questioning behaviours and patterns in high-stakes examination classes in the primary and secondary sector
- There is also need for inquiry into the types of questions teachers ask students in the lower levels of the primary school system
- Further studies should be conducted into teacher questioning behaviours and patterns through classroom observations, field notes, digital video recordings, and focus group discussions. This may provide deeper insights into the apparent mismatch between what teachers say they do and what they actually do in the classroom.

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