Original Paper

Teachers' Knowledge and Use of Behaviour Modification Strategies in Classroom Management: Does Gender Matter?

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Abstract

This study investigated the knowledge of teachers on behaviour modification strategies in classroom management. The descriptive survey design (quantitative approach) was employed. A multi-stage sampling procedure was employed for the study. Simple random, systematic, cluster and proportionate stratified sampling techniques were used to sample 327 public basic school teachers in the Western North region of Ghana for the study. Data for the study was collected using adapted questionnaire with 5-point Likert-type scale. Data were analysed using descriptive and inferential statistics. The study found that public school teachers in the Western North region of Ghana have moderate knowledge level on behaviour modification strategies in classroom management. More so, teachers in the aforementioned region frequently used tangible behaviour modification strategies such as earning incentives like toffees in classroom management. This study further established no significant gender difference in the use of behaviour modification strategies in classroom management. It is recommended that there should be an increase in content of classroom behaviour modification strategies in the program structure for teacher education institutions. Also, periodic refresher courses and in-service teacher preparation programs should be organized for teachers to help update their knowledge on the use of positive modification strategies in managing the classroom. This could help teachers find the use of the behaviour modification strategies less stressful and hence, manage their classrooms effectively.

Keywords

Behaviour modification, Classroom management, Gender matter, Teachers knowledge

1. Introduction

Education is focused on imparting knowledge, influencing the behaviour of a person positively, producing responsible citizens, and bringing on a complete personality development of the individual (Shilvock, 2018). To achieve this, discipline plays a very significant role. Disciplinary issue in the classroom has remained very challenging in education presently (Yeboah et al., 2020). Schools are always regarded as institution for transferring knowledge and culture to the generation yet to come (Youssef et al., 1998 as cited in Lwo & Yuan, 2010). At school, teachers take on a significant position as educationalist and disciplinarian (Society for Adolescent Medicine [SAM], 2003). Consequently, there are numerous strategies teachers employ to discipline students in the classroom and the school as a whole. These include the use of negative punishment; where an appetitive stimulus is removed following an unpleasant behaviour, and positive punishment, that is adding a noxious stimulus following behaviour. It also includes negative reinforcement; where behaviour is strengthened by removing, or avoiding an aversive stimulus, and positive reinforcement; adding a favourable stimulus to strengthen the occurrence of a pleasant behaviour.

Classroom management goes hand-in-hand with student discipline and differ as a function of teachers' gender (Brooks, 2012; Tindan et al., 2023). For instance, female teachers are testified to use positive behaviour management practices since they are generally sympathetic towards children and have inordinate tolerance for students with behaviour problem in their class (Sullivan et al., 2014). To understand how to teach and manage a classroom effectively, it is important to understand teacher classroom management in the context of their knowledge bases (Ayebo & Assuah, 2017). Therefore, having a good understanding of what stimulates students within and outside the classroom have immense influence on management strategies employed (Department of Education, 2009).

Pattani (2018) talk of behaviour modification strategies as the techniques used in modifying behaviour by changing a person's existing condition to help him or her function better in everyday life. Parents use it to teach their children right from wrong. Therapists make use of it to promote healthy behaviour in their clients and animal trainers use it to develop obedience among pets and its owners. The principles of behaviour modification have also been efficiently used in a number of classroom settings to target series of appropriate school-based behaviours such as compliance and self-management (Beaulieu et al., 2012). Regardless of its effectiveness reported by researchers, Allen and Bowles (2014) argues that its application in the classroom is insignificant. It therefore, appears to have become increasingly challenging for educators to ensure discipline in schools without the use of punishment in the wake of the new education legislation that regulate punishment in schools.

In 2019, the government of Ghana through the Ministry of Education and the Ghana Education Service (GES) placed a ban on all forms of abusive punishment more particularly regarding the use of cane on school children. The prohibition of corporal punishment in schools demanded that new approaches to discipline be employed to protect the right of learners (Skaalvik & Skaalvik, 2017). In view of this, GES directed the use of Positive Discipline Toolkit which offered alternatives to harsh punishments

and recommended corrective measures such as removal from leadership positions, changing of seating position, and many others to modify the behaviour of learners. However, the proponents of this positive toolkits failed to acknowledge the fact that every child is different and what works in modifying the behaviour of one child may not work for the other.

While several studies have explored different types of behaviour modification strategies used by teachers in the classroom (Weistein et al., 2004; Temli-Durmus, 2016) few of these studies have focused on how knowledgeable teachers are about behaviour modification strategies in classroom management. Available literature on teachers' knowledge of behaviour modification strategies in classroom management focused on pre-service teachers (O'Neill & Stephenson, 2012; Opare et al., 2024; Yeboah et al., 2020), pre-school teachers (Randazzo, 2011) and teachers in special education schools (Alotaibi, 2015). Yeboah et al. (2020) for instance investigated pre-service teachers' knowledge on behaviour modification techniques in classroom management in Ghana. Randazzo (2011) explored elementary teachers' knowledge and implementation of applied behaviour analysis techniques in New Jersey. Alotaibi (2015) also investigated the knowledge and use of applied behaviour analysis among teachers of students with autism spectrum disorder in Saudi Arabia. Nonetheless, there are teachers in the mainstream educational setting whose knowledge level on behaviour modification strategies in the classroom, the researcher belief ought to be researched to find out which classroom management strategies they employ in managing students' disruption in the classroom.

2. Knowledge of Teachers on Behaviour Modification Strategies in Classroom Management

Until recent times, the approach to classroom management was based on the assumption of the popular proverb "spare the rod, spoil the child" (Manoj & Anoop, 2017). Even though non-interventionist like Neil hold that teachers' intervention to modify learners' behaviour into a desired one is unnecessary, interventionists on the other hand upholds high degree of teacher control in the classroom and believe that a teacher's rewards and punishment bring about suitable behaviour in learners (Mangal, 2012). Applied behaviour analysis has been the theoretical basis for teachers on classroom management since 1960 (Egeberg et al., 2016). Classroom management is focused on creating a positive learning environment through a good teacher-student's relationship in solving problems (Saft & Pianta, 2001). Agreeing to this, Oliver and Reschly (2010) established that classroom management could be measured under three broad dimensions such as instructional management, people management and behaviour management. These three dimensions categorized by scholars' highlights on the need for teachers to know the appropriate modification strategies that may perhaps be used to create a positive classroom environment and guide their effort to attain appropriate behaviour among learners. As a result, this study does not also deviate from these three dimensions in measuring classroom management.

Oliver and Reschly (2010) expressed that the most essential things for teachers to consider in their quest to manage learners' behaviour includes the skills used in encouraging and reducing appropriate and inappropriate behaviours respectively. Merrit (2016) therefore, submits that teacher's knowledge

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and ability to use these skills makes them experts in handling and dealing with problem behaviours. Hence, making them effective managers of behaviour in the classroom

Nevertheless, earlier studies on teachers submit that their knowledge, competence, and confidence in these domains are limited (Baker, 2005; McKenzie et al., 2011). For instance, Baker (2005) investigated 345 secondary and elementary teachers to evaluate their ability and willingness to implement behaviour management techniques. In general, teachers reported to have low ability to use varied modification strategy in managing the classroom. McDaniel et al. (2015) also found that 39.72% of teachers reported to have challenges managing the classroom due to their inadequate knowledge in behaviour assessment and management techniques. Concurring to this, Ackah (2016) confirmed the inadequate knowledge of teachers in the use of behaviour modification strategies like attention, behaviour contracting, and shaping specifically in managing disruptive behaviours in schools.

Shin and Koh (2008) surveyed 167 Korean and 116 American public high school teachers from urban school districts to solicit information on students' disruptive behaviour and the strategies they implement in managing them. Findings from their study indicated that 55% of American teachers pointed out the use of punitive behaviour management strategies such as punishment and time-out whilst 33% indicated the use of positive interventions like rewards, behaviour contracting and extinction. This implies most of these teachers seem to be more knowledgeable about the punitive modification measures other than preventive ones. These finding presupposes that most teachers still resort to reactive and aversive discipline systems in managing the classroom.

Randazzo's (2011) has expressed the view that teachers mainly disregard the use of behaviour modification strategies in managing the classroom because they do not possess knowledge of adequate collection of modification strategies to choose from and also, do not have the required skill for its implementation. If teachers and educators have a better knowledge and understanding of the effectiveness of behaviour modification strategies in classroom management, they could help in its implementation by assisting each other to accept and use the strategies in their classrooms (Feuerborn & Chinn, 2012). When appropriately used, learners make connection between teacher use of positive modification strategies and doing the correct thing (Moore-Partin, et al., 2010). Khalil and Mohammed (2015) posit that most students tend to be praise-hungry and are often used to only hearing about what they do wrong and punished for that. Therefore, reinforcing them for displaying good behaviour grabs their attention and stimulates them.

3. Gender and Use of Behaviour Modification Strategies in Classroom Management

Studies on managing disruptive behaviour in the classroom had examined how teacher characteristics such as gender influenced their belief of classroom discipline. Sharma et al. (2018) in their study found male teachers unlike females to have challenges with the use of behaviour modification strategies in maintaining order in their classrooms. Aliakbari and Abdollahi (2014) found that male teachers employed strong control and punitive techniques when managing their classroom, compared to their female colleagues who only comment on student inappropriate behaviour and give warnings. In addition, Andreichyn (2015) reveals that women are better managers of children in the classroom than men because, they begin these management roles right from conception as they interact with the fetus in the womb.

Although teachers have alternatives in identifying and using classroom modification plans that are suitable for their needs (Brown, 2014), the question still remains as to which of these approaches' teachers are knowledgeable and conversant with, and often use in managing today's classroom? In an attempt to respond of the question above, this study seeks to investigate the knowledge of teachers on behaviour modification strategies and the frequency with which these modification strategies are used in classroom management in the Western North region of Ghana. This study also seeks to find out if there is a significant difference in the use of behaviour modification in classroom management with regards to gender.

4. Research Questions

1) What is the knowledge level of teachers on behaviour modification strategies in classroom management?

2) What is the most frequent behaviour modification strategies teachers use in managing the classroom?

5. Research Hypothesis

H_0: There is no gender difference in the use of behaviour modification strategies in classroom management.

6. Methodology

The study employed descriptive survey design with the quantitative approach. The design was deemed appropriate for this study because the researcher examined situations descriptively and made no attempt to determine the cause behind the phenomenon. Employing the descriptive survey design also offered the opportunity to evaluate relationship between these variables. Using descriptive survey design, helped to clarify matters as they existed without the researcher having control over the variables under investigation. It also enabled the researcher to describe situations and circumstances that emanated from the study as they were without manipulating any variable.

The descriptive survey is noted for some weaknesses such as it being time consuming in terms of its administration (Gravetter & Forzano, 2012) and having the possibility for error and subjectivity on the side of the researcher (Cohen et al., 2004). This weakness of being time consuming however, informed the researcher on the need to employ two trained research assistants during the data collection. This aided the researcher to speed up the data collection process. In an attempt to minimize the subjectivity on the part of the researcher, it was ensured that, the data collection instrument dealt essentially with questions that concerned what existed with respect to the variables in the study.

The population for the study comprised of all public basic school teachers in the Western North Region of Ghana. The sample size for the study was 327 respondents. The selection of respondents was based on multistage approach, where simple random procedure (lottery method), systematic, cluster sampling, and proportionate-stratified sampling were used. The sampling procedure was carried out in stages and the larger population was divided into smaller units in several stages in order to make primary data collection more manageable and easier.

The study used an adapted Behaviour Management scale developed by Randazzo (2011). In the adaptation process, few modifications were made on some dimensions and items so that they could be contextually and culturally appropriate for use. The original scale had 15-items (α=.90) with no sub-dimensions. This is a Likert point scale with responses such as not at all knowledgeable=1, slightly knowledgeable=2, somewhat knowledgeable=3, knowledgeable=4 and very knowledgeable=5. However, the adapted version had 15-items distributed among four factor components (Intangible, tangible, behaviour contract and punitive strategies) after an Exploratory Factor Analysis (EPA) was conducted following the same scale. This was to reduce the number of variables to appear in the regression model. The KMO result produced a value of .72 with p<.000 indicating that the data was appropriate for the chosen statistical test. The Total Variance Explained indicated that only four components produced eigenvalues above one (2.69, 2.43, 1.27, 1.16) and these four components explained a total of 50.37% of the variance. Examination of the component matrix output showed un-rotated factor loadings of the four components, which were above .300. The pattern matrix output examined confirmed items loading on four-factors with five items loading above .300 on component 1(Intangible Strategies), four items loading above .300 on component 2(Tangible Strategies); three items loading above .300 on component 3(Behaviour Contract Strategies); and three items loading above .300 on component 4(Punitive Strategies).

Data gathered was analysed using descriptive and inferential statistical tools. Data on research questions 1 was analysed using frequencies and percentages. This was to find out the knowledge level of public teachers on behaviour modification strategies in classroom management. However, decisions pertaining the knowledge level were done based on a set criterion. Data on research question 2, was analysed using means and standard deviations to find out the most frequent behaviour modification strategies public teachers used in managing the classroom. Whereas, the research hypothesis was tested using MANOVA. This statistical tool was used because the research hypothesis sought to find out if

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differences existed among two independent groups (male and female teachers) on the use of behaviour modification strategies, using a multi-dimensional continuous variable.

7. Result and Discussions

Presented in this section is the analysis and discussions on the research questions and hypothesis that guided the study.

Table 1. The Knowledge Level of Teachers on Behaviour Modification Strategies in Classroom Management

B M S	Score Range	Frequency	Percentage (%)	Level
(CR = 15)				
Intangible Strategy	5-11	119	36.4	
	12-18	148	45.3	Moderate Knowledge level
	19-25	60	18.3	
(CR = 12)				
Tangible Strategy	4-9	124	37.9	
	10-14	140	42.8	Moderate Knowledge level
	15-20	63	19.3	
(CR = 9)				
Behaviour Contract	3-7	105	32.1	
	8-11	142	43.4	Moderate Knowledge level
	12-15	80	24.5	
(CR = 9)				
Punitive Strategy	3-7	92	28.1	
	8-11	134	41.0	Moderate Knowledge level
	12-15	101	30.9	

Note. n=327.

Source: Field Survey (2021).

Table 1 data analyses indicates that teachers in public Junior High Schools in the Western North region of Ghana have a moderate knowledge level on behaviour modification strategies Thus, the criterion obtained by respondents under the various components of the behaviour modification scale were neither below nor above the average score. All scores obtained felt within the average scores. The

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finding of this study is comparable to the finding of Randazzo's (2011) study among elementary teachers in two New Jersey School districts in the United State who also found teachers to be moderately knowledgeable about behaviour modification strategies in managing the classroom using the same scale. This confirmed the study findings of Yeboah et al. (2020), who established in a study on teachers' knowledge on classroom behaviour modification techniques that teachers have insufficient knowledge on classroom behaviour modification techniques. The moderate knowledge level recorded could be as a result of the introduction of the positive toolkits by the Ghana Education Service (GES) and the attention given to classroom behaviour modification strategies in teacher education programs. However, there is the need for more concern and attention to be given to the teaching of behaviour modification strategies as a course of study. This is because a relatively large number of respondents were still found to possess a low knowledge level on all the components of behaviour modification strategies with the exception of punitive strategies.

Table 2. The Most Frequent Behaviour Modification Strategies Teachers Use in Managing the Classroom

BMS	Mean	Std. D
Intangible strategies	8.85	1.66
Tangible strategies	18.77*	3.84
Behaviour Contract	13.55	1.51
Punitive strategies	6.12	1.30

Note. N=327. * Denotes highest mean value.

Source: Field survey (2021).

Results from Table 2 shows that the use of tangible behaviour modification strategies (M=18.77, SD=3.84) was frequently used by teachers in managing the classroom.

The tangible behaviour modification strategies such as teachers rewarding students for demonstrating positive behaviour, students earning incentives like toffee as well as points that can later be traded for bigger prizes, found to be frequently used by teachers may perhaps be due to their less expensive nature. However, these could also help them to manage their classrooms with little stress as student found to be disrupting class might learn to put up a desirable behaviour in order to also receive teacher's praise and attention in the classroom. This finding supported the study by O'conner et al. (2011), and Madjar and Cohen-Malayey (2016) which found incentives such as food, and special privileges as the most frequent behaviour modification strategies used by teachers in the classroom. It also confirmed the study findings of Haydon and Musti-Rao (2011) citing the use of incentives as the most important forms of positive behaviour strategies.

Table 3 shows the relationship between the Multivariate test result on gender and use of behaviour modification strategies in classroom management.

Table 3. Multivariate Test Result on Gender and Use of Behaviour Modification Strategies in Classroom Management

Effect		Value	F	Hypothesis df	Error Df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.990	8093.216[b]	4.000	322.00	.000	.990
	Wilks' Lambda	.010	8093.216[b]	4.000	322.00	.000	.990
	Hotelling's Trace	100.537	8093.216[b]	4.000	322.00	.000	.990
	Roy's Largest Root	100.537	8093.216[b]	4.000	322.00	.000	.990
Gender	Pillai's Trace	.007	.603[b]	4.000	322.00	.660	.007
	Wilks' Lambda	.993	.603[b]	4.000	322.00	.660	.007
	Hotelling's Trace	.007	.603[b]	4.000	322.00	.660	.007
	Roy's Largest Root	.007	.603[b]	4.000	322.00	.660	.007

Source: Field Survey (2021).

To determine whether there was any gender difference regarding the use of behaviour modification strategies (tangible, Intangible, behaviour contract and punitive) in classroom management, the multivariate analysis of variance (MANOVA) was used as shown in Table 3. This was deemed appropriate because the dependent variable (behaviour modification strategies) had four level against gender with two levels (male and female). All assumptions were checked with no serious violations before running the MANOVA analysis. Because the test involved multiple dependent variables, the Bonferroni adjustment proposed by Pallant (2016) was applied in order to reduce the probability of committing a Type I Error. More so since there was unequal sample size among male and female participants in the study, interpretation of the Table was done using the Pillai's Trace rather than the Wilks' Lambda.

The Pillai's Trace result in showed no significant difference between male and female teachers in the use of behaviour modification strategies. Thus, F (4, 322 =.603, p=.660; Pillai's Trace=.007, partial eta squared (η^2)=.007. This means that, gender do not play any significant role in the use of behaviour modification strategies in classroom management.

This finding disconfirmed the assertion by Sullivan et al. (2014) that female teachers are testified to use positive behaviour management strategies since they have inordinate tolerance for students with behaviour problem was not supported.

8. Conclusion and Recommendation

Public basic school teachers in the Western North region are moderately knowledgeable of behaviour modification strategies (intangible, tangible, behaviour contract and punitive) in classroom management. This study found the use of tangible strategies as the most frequent behaviour modification strategies teachers in the Western North region used in managing the classroom. More so, there was no significant difference between male and female teachers in the use of behaviour modification strategies in classroom management. Adequate knowledge level of teachers on behaviour modification strategies is important for effective classroom management.

It is recommended that curriculum developers should increase the content of classroom behaviour modification strategies in the program structure for teacher education institutions in Ghana. By so doing, teachers would also gain more knowledge on varieties of behaviour modification strategies to be used as classroom management tools aside the use of tangible modification strategies which was found to be the most frequent strategies teachers employed in the classroom.

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