Methods used in Implementing Games programs and their Effects on Academic achievement in Secondary Schools in Rongo Sub-County, Migori County, Kenya

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Abstract

Generally, it has been established that games are part of non-formal curriculum and they do complement the formal curriculum. However, in secondary schools, games have been treated as second rate. Methods used in implementing of games programs varies from one school to another because of the varied support given and its value in enhancing academic achievement has not been established. The purpose of this study was to investigate the implementation of games and its contribution to students' academic achievement in secondary schools in Rongo Sub- County, Kenya. The objective of this study was to determine methods used in implementing games programs in secondary schools in Rongo Sub-County secondary schools and their effects on academic achievement.The study adopted correlation, survey and ex post facto designs. The target population included 50 games teachers, 50 head teachers and 2000 form four students in 50 schools in Rongo Sub-county that sat for the Rongo Sub-County Examinations in the year 2010. Saturated sampling technique was used to select 46 games teachers and 46 head teachers used in the study. Stratified random sampling technique was used to select 700 form four students who were a divided into two equal groups (n=350) named as experimental group and control group. Students' questionnaires, games teachers' questionnaires, games teachers' interview schedules, head teachers' interview schedule and an observation schedule for games facilities were used to collect data. Quantitative data was analyzed using descriptive statistics while qualitative data was received in verbatim form, transcribed and reported according to emerging themes. Findings for the study the study further established that academic achievement had some relationship with the level to which a student participated in games programs.

It was recommended that school administrations should provide adequate material and support for implementing games and special attention should be given to the academic wellbeing of participants in games since games do contribute to better academic achievement of students.

Key words:Methods, implementation, games, effects, academic, secondary, schools, Kenya

Introduction

Ordinarily, schooling and learning are dynamic in nature. Education therefore, is not just the memorization of facts, figures and skills but it is all round development of the students (Zahid, 2012). Logically, games are an integral part of education system. As Yakubu (2012) says, games offer the best chance through which children can express themselves and improve their skills. Games are like laboratories for children. Children know each other, even themselves, by means of games and improve their new abilities by discovering them through games. Alexandria (2004) observes that little emphasis is given to games programs in a school setting. This is due to lack of conclusive evidence on the efficacy of games programs. According to NASBE (2008), a commission set up in Indiana State in the United States of America to gather information and report on the implementation of games programs in secondary schools, did find out that games go hand in hand with the formal curriculum but the latter needs to be given priority since it is the base of success in education. The commission stated that most countries, especially in the developing world, do value those who prosper in the formal curriculum but look down upon those who participate in games programs.

In Kenya, review and development of education policy and practice has rarely focused on games programs. The first Kenya Education Commission in independent Kenya headed by Prof. Simeon Ominde (Rep. of Kenya, 1964) sought to reorient education policies that perpetuated social inequalities in the colonial society. The focus was on promoting academic subjects to produce manpower to take over white collar jobs left by the departing colonial officers. Non-formal curriculum was identified as contributing to this process. A study of curriculum development in Kenya led by Gordon Bessey (Rep. of Kenya,1972) noted that non-formal curriculum (activities and subjects) were an integral part of helping train Africans to become self-reliant and take over the roles of the departed colonial officers and also cater for those who could not make it in the formal curriculum.

Rongo Sub-County secondary schools have not featured much at the regional and national games competitions in the recent past. Very few schools from Rongo Sub-County make it past the regional level and when they do manage to proceed to the national level, they perform dismally as shown on Table 1.0 below.

Table 1. Term One Ball games (National level) representation per sub-county.

Year	Rongo	Migori	Kisii	Nyamira	Kisumu	Siaya	Homa bay
2008	0	1	4	3	4	4	1
2009	0	2	3	2	5	4	1
2010	0	1	3	2	4	5	2

Source: (Rongo Sub-County Sports Office, 2009)

Most studies (Saylor& William, 1979, Jacobsen & Chase, 1989, Staffo, 1991, and Lisella and Sertwatka, 2007) attribute poor performance to poor methods used in the implementation of games programs in secondary schools, less attention given to games programs, less value given to games programs, challenges faced in implementation of games programs. However, no study attributes the contribution of games programs to the academic achievement of learners to academic achievement. According to the sources at the Rongo DEO'S office (DEO, 2009) in the past three years it is only St. Pius Uriri (now in Uriri Sub-county) and Rapogi Boys that have made it past the regional level and then performed better at the national level. It is therefore worth trying to dig deep and find the main reasons why these secondary schools do not perform as those from the neighboring sub-counties and regions as seen in Table 1. In Rongo Sub-County there has been little investment in games programs facilities by stakeholders which is seen in the inadequacy of the facilities, in relation to the number of participants who use them (Republic of Kenya, 2002). Most schools in Rongo Sub-County do not have enough games equipment and this slows down the development of games programs in the sub-county.

Statement of the Problem

The state of games in Rongo Sub-County has entered the public domain. Games programs do have benefits to learners and the community at large but in Rongo Sub-County it has not been effected as seen in the South Nyanza district Development Plan of 1989-1993 (Rongo Sub-County Office,2009), where the establishment of facilities to help in the implementation of games programs was proposed but to date nothing has taken off. The head teachers and principals of secondary schools seem to be reluctant to offer support in the implementation of games programs while games teachers are unwilling to offer training to students participating in games. In addition, the government of Kenya made Physical Education a compulsory subject in the year 2002. There is minimal follow up made by the education officers on whether this directive is implemented or not, a factor that complicated the existing problem. This has led to many challenges being encountered in the implementation of games programs within Rongo Sub-County.

Methods used in Implementing games and their effect on students' academic achievement

For the proper and effective implementation of games, there are some strategies that need to be employed by those in charge of games. These are strategies that have been suggested by specialists in games. It is not wise to just use one of them but to employ a variety of them for the success of games.Fortune and McKeen (1987) list some strategies that would make implementation of games effective. The strategies include the following: employing conflict builders, team builders, physical builders and concentration, teaching group work, improvisation, developing a school policy on the implementation

of non formal curriculum, employing a variety of learning methods-role playing, debates, group analysis, in-service, teamwork, video and audio methods-videos, slides etc., having an organogram (Administrative Organizational Structure.), establishing resource centers.

It is better to scrutinize each of these listed strategies in the implementation of games, one at a time.

Employing confident builders, team builders, physical builders and concentration

Jacobson and Chase (1989) argue that attitude is an important aspect of success in every endeavor and students need to cultivate this virtue in whatever they do. Teachers need to employ methods that will help build confidence in the learners, this confidence makes the learner believe in themselves and do whatever they are doing well. The need of teamwork in every non formal activity is also very important be it in competition or not. Once the learner knows the importance of teamwork then they will know they need one another for success. LaGuire (1982) concludes this by saying that if a learner agrees to concentrate in whatever he or she does then it will eventually end up well. All these virtues once developed in the learners, and then the teacher finds it easy to implement games.

Teaching Group work

"Group work and teamwork go hand in hand" (Saylor & William, 1979). We as teachers need to heavily let our learners know that unity is strength, they need one another to succeed. Once this virtue is planted into our learners then the work of the teacher becomes easy, they will find no difficulties in implementing games because whatever is being done moves from "mine" to "ours".

Improvisation

Improvisation is the art of utilizing the available resources. According to Sutherland (1997), not all schools have the required materials and equipment for implementing games. He says that the implementation of games should not stall just because of lack of facilities. He suggests that in such a case, the teacher, together with the learners need to improvise and use the available materials and resources. This will ensure that games are effectively implemented. Joekel (1985) agrees with Sutherlands' idea of improvisation. He believes that improvisation is an aspect that needs to be cultivated in every teacher in charge of games. He goes further to say that a teacher who cannot improvise is not competent enough to handle games simply because he or she lacks creativity.

Developing a school policy on the implementation of non-formal curriculum an organogram

A school should have a policy guiding it on how games should be implemented. This policy will always be referred to and followed throughout. Some of the ideas that should appear in the policy are; the time for conducting games, how the learners and teachers should appear during these activities. Lisella and Serwatka (2007), argue that this policy is the one that should act as a guideline in the implementation of games. He goes further to say that the policy should define an organogram where each and everyone within the laid down procedure is assigned a duty and function which is clearly defined. Once people know their duties and roles then the implementation becomes effective.

Employing a variety of teaching/learning methods when implementing non formal curriculum

This is one of the best strategies that teachers need to employ when implementing the curriculum, whether formal or non-formal. A teacher should not be using one implementation method all the time, methods need to vary for the proper implementation. Joekel(1985) believes that teachers need to employ a variety of methods when conducting games and some of the methods that he suggests which effectively work are; role playing, debates, group analysis, workshops, in service, teamwork etc. The school can also use video and audio methods where the learners can be made to watch or listen to successful groups and imitate what they have seen and employ it in their lives.

Establishing Resource Centers

The Resource Center is where teachers and learners can keep their equipment and materials for games. They can also use these resource centers to practice and effect the non-formal curriculum. This center acts s a laboratory for the non formal curriculum where demonstrations can be conducted and then later transferred to the fields, halls and farms. The learning resource center will definitely improve the implementation of games in any school. According to Indoshi (1999) in-servicing of teachers is crucial in the updating of teachers with the current and up dated means of tackling issues. This can effectively be employed in the case of the resource centers. Once these resource centers are up dated, the games teachers can always be visiting them to help them in updating their implementation of games. This is also in line with Pivec et al (2003) suggests on the issue of learning centers. They reason that these centers need to be availed within reach of teachers for improvement of service delivery. The literature reviewed in this section deals with suggested method for effective implementation of games. It does leave a gap by not suggesting clearly what methods of games implementation can be effectively used in the case of Rongo District. This study, therefore, wishes to fill this gap by listing the most effective methods of implementing games which can be applicable in the case of Rongo District and other neighboring districts in Nyanza province and beyond. This will be made possible in that most of the methods of implementation will be suggested by the students and teachers in the said district, making it more applicable.

Methodology

The study was based on both survey, ex post facto, and correlation designs. Goetz and Le Compte (1984) advised that the main criterion for selection, development and implementation of a research model is whether the design allows the study to effectively address the research goals and questions. The survey design was used in this study because it gave the researcher a chance to get the feelings and attitudes of the respondents on the implementation of games programs through questionnaires, interviews, and observation schedule(Orodho, 2005).The target population for this study was 50 head teachers, 50 games teachers, and 2000 Form Four students. All the 50 secondary schools were offering games to their students. The study opted to use head teachers because they are the ones in charge of disbursing funds and offering administrative support to teachers and students. Games teachers were used in the study due to the fact that they are the patrons in charge of guiding the learners during games, and are influential in determining how learners play (Fullan, 2001). Form four students were used in the study because of their wide experience with games in secondary schools and they were likely to give genuine and accurate responses ,at the same time their results in the district exams was required for the study.

The study comprised head teachers, games teachers, and students. Simple Random Sampling technique was used to select pilot sample. The study then used saturated sampling technique to select the 46 head teachers and 46 games teachers. The study also used the stratified random sampling technique to include 700 Form Four students in the sampled schools. The strata involved 350 students who participate in games and 350 students who did not participate in games. The samples represent at least a third of the total population (Gall et al 1996).Data for this study was collected using questionnaires, interview schedule, observation schedule and document analysis guide

To validate the instruments, experts in the area of curriculum studies and research methods at Maseno University were consulted to examine the tools of data collection with the view to check on their content and face validity. This was to clear the instruments of unclear directions, vocabulary, poor sentence, poorly constructed items, ambiguity, improper arrangement and identifiable pattern of answers. Their suggestions were used to revise the questionnaires, interview schedules, and observation schedule before preparing the final copies.

The test-retest method was used to estimate the reliability of the instruments because it involves administering the same instrument to the same respondents under the same circumstances on two occasions and correlating the scores (Rust &Golombok, 1999). The instruments were administered to the same respondents within an interval of 2 weeks. The responses to the items were analyzed accordingly. Specifically, the responses to the items on the questionnaires were assigned numerical scores. Those items requiring the responses to range from "strongly agree" to "strongly disagree" were scored from 5 to 1. The scores of the responses from the questionnaires used on the two occasions were used to calculate the reliability coefficient using Cronbach's alpha (Darleen, 1997).

Results and discussion

This section presents more findings from the analysis of data to test the stated research hypothesis:

Hypotheses

In this study, the following null hypothesis was tested at 5% significance level:

There is no significant relationship between methods used in implementing games programs and students' academic achievement.

Consequently, analysis of methods used was conducted via students and teachers questionnaire responses and then thematically through head teachers responses in the interviews.

Students' perceptions of methodsused in implementation of games programs

Eleven items were proposed to measure student's perceptions of the methods used to implement games programs. Students were asked to indicate their level of agreement on whether suggested techniques were used in implementing games programs. Results presented in table 2 suggest that several methods are employed in implementation of games programsamong the schools in the sub-county. The mean response scores in eight of the eleven items were approximately 3.00 which had been coded to represent agreement.

Table 2. Results of Descriptive Analysis of Students Perceived Methods used in Games in Schools in Rongo Sub-County

Probable Techniques	Mean	Std. Deviation
Teachers improvise equipment that they lack.	2.20	1.228
Employing confident builders	2.59	1.389
Employing team builders	2.72	1.494
Employing physical builders	2.35	1.587

	Mean	Std. Deviation
Concentration in games	2.86	1.359
Employing video and audio methods	2.71	1.337
Teaching group work	2.79	1.385
Teaching improvisation	2.52	1.491
Developing a school policy on implementing games	3.04	1.318
Having an organogram for running games	2.84	1.361
Having a resource centre for games	2.06	1.321

Source: Survey Data (2010)

More precisely, students tended to agree that schools had developed policies on implementing games programs (M=3.04, SD=1.361); that schools concentrated in games programs (M=2.86, SD=1.359); that they had organograms for running games programs (M=2.84, SD=1.361); that they were taught group work (M=2.79, SD = 1.385); that team builders were employed (M=2.72, SD=1.494); that schools employed video and audio methods (M=2.71, SD= 1.337); and that confidence builders were employed (M=2.59, SD = 1.389). They however, disagreed that schools had resource centres for games programs (M=2.06, SD=1.321); that teachers improvise equipment that they lack (M=2.20, SD=1.228) and that physical builders were employed (M=2.35, SD=1.587).

Teachers Perceptions of Methods used in implementation of games programs

Teachers were also asked to indicate methods used in implementing games in secondary schools in the sub-county. Teacher perceptions were measured using eight items. Responses were elicited on a 5-poit scale ranging from 0-undecided to 4-strongly agree.

Table 3 Results of Teachers Perceived Methods used in Games programs

	Mean	Std. Deviation
Use of skilled personnel	2.91	1.226
Administrative support	3.89	.315
Intrinsic motivation	3.43	1.259
Extrinsic motivation	2.83	1.253
Availability of time	2.98	1.125
Games teachers given free hand in implementation	3.57	.583
Teachers given enough materials to help implement games	1.96	.942
Learners given equal opportunities to take part in games	3.35	.897

Source: Survey Data (2010)

The mean response scores in most items were approximately 3.00 indicating that the respondents agreed that the suggested methods were being used. Teachers strongly agreed that administrative support as a strategy was used (M=3.89, SD= 0.315) and that games teachers were being given a free hand in implementing games programs (M=3.57, SD=0.583). They tended to agree that other methods were intrinsic motivation (M = 3.43, SD=1.259); giving learners equal opportunities to take part in games (M=3.35, SD=0.897); availing time for games programs (M=2.98, SD=1.125); using skilled personnel (M=2.91, SD=1.226); and extrinsic motivation (M=2.83, SD= 1.253). They however disagreed that enough materials were provided (M=1.96, SD=0.942). Table 4.8 above presents this information.

The implication of the results of student and teacher perceptions is that schools in Rongo district have designed strategies and techniques to use in implementing games. Strategies such as use of skilled personnel, motivation and giving teachers freedom to perform their games responsibilities are extensively used. In addition, techniques such as use of confidence and team builders, video and audio methods as well as use of organograms are also being put in use. The only impediments to effective implementation of games in the district were noted to be lack of materials and resource centers for games.

Two questions were used to explore head teachers perceptions of methods used in implementing games programs. First, head teachers were asked the methods employed in their schools to implement games. Next they were asked to identify methods which they would like to see their teachers use. Results are presented in the thematic matrix in table 4.

Table 4 Results of Thematic Analysis of Head teachers Perception about Techniques used Games in Schools in Rongo District

Question	Thematic issue	Sub-thematic issue
What techniques are employed in your school to implement games?	Use of skilled personnel	• In an effort to improve games, we sometimes source for qualified coaches from outside • We occasionally sponsor our games teachers to attend skills training
	Motivation	• We encourage equal participation of students in games • We provide awards to students who excel in games • We reward our games teachers whenever their disciplines perform well • We allow our games teachers a free hand to plan and manage their disciplines • We provide conditioning for the students in games by providing confidence, team and physical builders. • We purchase video and audio equipment for facilitating training.
	Autonomy	
	Games infrastructure	
	No (n=46, 100%)	
Are there techniques that your games teachers do not use but you wish they would use?		

Source: Survey Data (2010)

Head teachers identified four methods which they employed in their schools to implement games programs. First, they stated that they used skilled personnel. They noted that in an effort to improve games programs in respective schools, they often hired qualified coaches from outside to complement the games teachers. Besides, they occasionally sponsored their games teachers to attend skills training whenever they had the opportunity. The second method often used was motivation. Head teachers indicated that besides encouraging equal participation of all students in games programs, they also awarded best performing students and also rewarded deserving games teachers. Autonomy was also mentioned as a strategy employed, head teachers observed that they mandated their games teachers to take charge of the games activities and did not interfere in their duties. The final strategy identified was provision of enabling games infrastructure. Head teachers noted that they provide conditioning of the students participating in games through confidence, team and physical builders. They also purchase video and audio equipment that can be used during training sessions. On the question of whether there were techniques not used by the games teachers and would wish to be used, all the head teachers failed to identify any.

The findings that methods such as confidence, team and physical builders are employed are consistent with the methods listed by Fortune and Mckeen (1987). According to these authors, implementation of games programswould be effective if methods such as employing team builders, physical builders and concentration, as well as using teamwork, video and audio methods among others were to be used. These findings also support the views by Jacobson and Chase (1989) who argued that teachers need to employ methods that would help build confidence in the learners, this confidence would then make learners to believe in themselves and do whatever they do well.

The findings regarding team building reflects the findings by Saylor and William (1979) that group work and teamwork go hand in hand. Consequently, games teachers need to inculcate unity among the participants so that they work together to succeed. In addition, the findings that games teachers incorporate video and audio methods in their training programmes

is consistent with recommendations by Joekel (1985) that teachers need to employ a variety of methods when conducting games for proper implementation. In watching and listening to successful groups, students can imitate what they see and employ them in their games activities.

The Relationship between methods used in Games programs and Students' Academic Achievement

To investigate the relationship between the methods used in games programs and students achievement, product moment correlation was once again used. The respondent's average scores in the methods variable were correlated with the assigned scores in the mock exams. As shown in table 5 there was a significant positive correlation between methods used in games programs and the final grade in mock (r=0.139, p< 0.01).

Table 5. Results of the Correlation between Techniques used in Games and Academic Achievement

		Techniques used in games	final grade in mock
Techniques used in games	Pearson Correlation	1	.139[**]
	Sig. (2-tailed)		.000
	N	691	691
final grade in mock	Pearson Correlation	.139[**]	1
	Sig. (2-tailed)	.000	
	N	691	700

[**]. Correlation is significant at the 0.01 level (2-tailed).

Source: Survey Data (2010)

These results imply that methods used in games programs have a bearing on the achievement the student attains in academics. This can possibly be explained by noting that some methods are light on the student and therefore do not leave them so exhausted but rather invigorated and fresh for studies. Besides, some methods may take up so much time thereby interfering with the students study time.

Conclusions

Using descriptive analysis of student and teacher perceptions of techniques used as well as thematic analysis of head teachers perceptions of techniques used, the study found out that schools in Rongo Sub-County have designed appropriate strategies and methods necessary for effective implementation of games. Among the strategies the study identified were: hiring skilled personnel, motivating games teachers, and allowing games teachers a free hand in their activities. The study also found out that methods such as confidence and team buildings, video and audio instructions and organograms have been incorporated to complement games teachers. The study however, revealed that most schools lacked materials and resource centres for effective implementation of games programs.

Using correlation analysis, the study further established that there was a direct relationship between methods used in games programs in Rongo Sub-County and students' academic achievement. Schools in Rongo Sub-County employ various methods for effective implementation of games programs. Among the common methods include hiring of qualified coaches, sponsoring games teachers to attend skills training workshops, motivating both students and teachers excelling in games and providing the enabling games infrastructure. These strategies/methods if well planned and utilized have the potential to impact positively on the students' academic achievement.

Recommendations

Secondary schools need to use effective methods in the implementation of games programs. This may have an effect on their academic achievement.

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