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The Effect of Educational Project on Learners Learning Outcome in Twelve Years Basic Education Schools: A Case of School Feeding Program as Implemented in Rubavu District, Rwanda

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Abstract

The purpose of this study is to help students, parents, secondary teachers, school's kitchen managers and Head teachers to master the methods and their role in encouraging learners to take lunch at school; especially improve student's learning outcomes in twelve years' basic education. The objectives are to assess the influence of food ratios and the timing of the meals on learning outcomes in Twelve Years basic education schools of Rubavu district, to assess the influence of food quality on learning outcomes in twelve years basic education schools of Rubavu district and to assess the influence of required materials in serving the food on learning outcomes in twelve years basic education schools of Rubavu district**.** The study employed a descriptive research design Questionnaires and interviews to enable the researcher to bring out the details of the exact situation on the ground. This study was be done at 4 twelve years basic education located in the Rubavu district targeting 2112 students. Therefore, 336 respondents were the target population of this study and the composition of the participants**.** To validate and ensure reliability of the questionnaire, a test retest was conducted in a space of two weeks between the test's correlation coefficient using SPSS version 22.0 (V. 22.0) was established and after which necessary adjustments on the content and its reliability was ensured before the main study. In this way, sampling technique was a simple purposive sampling technique was employed in this study, where every participant was given an equal and independent chance to participate. Recommendations of the study were: Government has to mobilize more stakeholders or non-government organization to orient their funds in the implementation of school feeding program, Parents must participate in school feeding program rather than thinking that this program should only be sponsored by government, Government has to develop continuous professional development that are related to the effective implementation of school feeding program and Government should make monitoring and evaluation of school feeding program because some of the school do not put more effort in its implementation.

1. Introduction

In an appropriate way, school feeding programs increase access to education, learning, improve children's health and nutrition especially when integrated into comprehensive school health and nutrition programs (Bundy, 2009) noted that in school feeding students have the potential for improving their performance because it enable them to attend school regularly and studied more effectively. Apparently, Rwanda is implementing a school feeding program in the 12 YBE across the country. The strategic intervention of the GoR is to create a national homegrown school feeding program, with a high level of community ownership: In an effort to address issues of hunger associated with poverty, school nutrition programs will be strengthened drawing upon community participation. The role of parent Teacher Associations strengthened to address the issue of out of school children dropout, through school management training.

Before the program of school feeding established they were several obstacles such as student dropout of school this caused a great number of children's under street who was searching for food to survive because their family cannot provide due to poverty and also they cannot complete their studies due to starving and to those who can attend school lead them to fail in class as well as poor learning outcome .In 2019 a school feeding program was implemented in secondary schools (Public &gov't) with 680,000 students with gov't subsidy on school feeding. In 2020 school feeding was scaled up to the entire education sector by subsidizing Public and gov't aided schools with 3,372,600 Students and this gives an increment of 396%. With this scale up school feeding budget was increased by 583% Gov't gives subsidy of 40% of meal cost the rest is contributed by parents. Basing on that background, the researcher is inspired to carry out this particular study to examine the extent to which school feeding program contributes towards learning outcomes in 12 YBE schools in rubavu district –Rwanda. The findings of this study therefore, provided facts in a deeper sense, to all education stakeholders' area of emphasis and improvement in the programs.

1.1 Objectives of the study

The general objective of the study is to examine the influence of school feeding on learning outcome in 12 YBE schools in Rubavu district.

Specific objectives:

1. To assess the influence of food ratios and the timing of the meals on learning outcomes in Twelve Years basic education schools of Rubavu district

2. To assess the influence of food quality on learning outcomes in twelve years basic education schools of Rubavu district

3. To assess the influence of required materials in serving the food on learning outcomes in twelve years basic education schools of Rubavu district

1.2 Research hypothesis

This research had the following hypothesis that a researcher asked for testing existence of the problem:

1. Ho1: There is no significant influence of food ratios and the timing of the meals on learning outcomes in Twelve Years basic education schools of Rubavu district.

2. Ho2: There is no significant influence of food quality on learning outcomes in Twelve Years basic education schools of Rubavu district.

3. Ho3: There is no significant influence of required materials in serving the food on learning outcomes in Twelve Years basic education schools of Rubavu district.

2. Literature review

In this chapter related literature review on what previous scholars have undertaken on research topics is covered. This chapter covers critical factors on the impact of school feeding on student's learning outcomes.

2.1 Empirical review

The empirical review means the research that was made in past years about the problem which seems to have the same information. A researcher described them below in detailed about what others have done. Less developed countries its education is rising on good level (Damon,Glewwe, Wisniewski & Sun, 2016). Education enrollment in higher education is expanding quickly while around 67 million children who are at the age of enroll primary school are not able to continue 53 % are girls among those numbers while 43% of them are located in sub Saharan Africa (World Food Programme, 2013).

2.1.1 Food quality and academic performance

Generally, interaction between nutrition and education can be understood in three ways (Ahmed, 2004). Firstly, health statuses and nutrition influence the child's learning and his / her performance in school. That is why poor nutrition among children affects their cognitive function and hence reduces their ability to participate in learning activities at school. Secondarily, children who are malnourished or unhealthy are unable to attend school regularly and which in turn leads to poor academic performances. Thirdly, hungry children encounter difficulties concentrating and performing complex tasks than those who are well nourished. So, poor children who don't get the basic nutritional building blocks from birth will be unable to learn easily. By the time, studies show that these children grow to primary school age, where most damages have occurred to them and in fact such damages are irreversible. Even if school meals are provided after this critical period, their capacity of learning is much less than what would have been if they were properly fed from infancy (WFP).

However there are conflicting arguments as to whether households adjust the feeding practices of school children at home in response to SFPs. (Adelman, 2008) shows there is no reduction of food at home given to children who participate in SFPs in such a way that those children who benefit from SFP should get less at home. Instead, school meals are additional diets intended to what he or she can get from home. To the contrary, there are counter arguments to such claims.

In response to the school meals, families may also adjust resource allocation among children within the household by taking away some resources from beneficiary children and redistributing them to other members of the household (Gilligan, 2008). As a result, those children from whom resources are taken away will be worse off if the food provided at school is not very useful compared to what they would have had at home.

2.1.2 School Feeding Program and School Participation

Having examined the conceptual relationships between school meals and school participation, this section discusses some of the relevant empirical studies. Most of the writing investigated that for this examination uncover SFP have for sure positive effect on school support as estimated by school enlistment, class participation, and understudy drop-out-status (Adelman, 2008). Be that as it may, the vast majority of these discoveries depend on exact information acquired from schools where the program was mainstream and has been moderately successfully actualized.

Tomlinson (2008) directed a field – think about in Western Kenya preschools in the vicinity of 2000 and 2004 to assess the effects of school sustaining programs on school interest and accomplishment. In this unique situation, preschoolers are characterized as youngsters between ages of 4 and 6 who lived inside a strolling separation of school. They found that youngsters in the treatment amass took an interest 35.9% of the time contrasted with 27.4% in the examination (control) gathering and this distinction was factually noteworthy (2004) The program expanded support of the two kids who were beforehand enlisted (what they call escalated edge) and kids who might have gone to class without the program (broad edge). Since there are solid complementarities between educator attributes and school meal is, they stress that any expansion in school interest without qualified training misses the mark concerning better instructive accomplishment.

Opposite to different examinations, they are basic to class dinners and they question on the off chance that they have any positive effect on school support whatsoever. For example world food program helped the school encouraging system (what he calls the standard program) and found that it doesn't expand enlistment at any level contrasted with control schools.

The following subsections are some of the literature in relation to the three aspects of school participation (school enrollment, class attendance and student drop-out) that will be discussed.

2.1.3 School feeding program and school enrollment

As it was talked about earlier, school dinners with the accessibility of finance in it will expand school enlistment if the program changes the family unit's tutoring choice for a few youngsters who might not have been selected in schools. Something else, these family units will enlist their kids, they should be persuaded that the net advantages of partaking in the program surpass the hole amongst direct and opportunity cost of tutoring and the normal advantage of tutoring (Gilligan, 2008). As it were, families for the most part think about the measure of the exchange in respect to the span of the money saving advantage whole and these correlations decide the greatness of the expansion in enlistment rates.

An examination led in sustenance to uncertain territories of Bangladesh to see the effect of school encouraging projects on cooperation (Ahmed, 2004). The information accumulation occurred in 2003 after youngsters in the treatment schools got an early in the day nibble of sustained wheat bread each school day for multi-year. To decide if the increments in enlistment and participation for the following segment were surely because of the program, he did econometric examination to disconnect other potential illustrative variables. Accordingly, Ahmed's examination discovered that school encouraging projects have measurable huge positive effects on both gross and net enlistment rates with 14.2% and 9.6% increments separately (in the same place). In any case, this finding does not assess other undetectable qualities of families in the treatment region that could influence the family unit's choice to select youngsters. In this manner, it seems uncertain to assert that the distinction in enlistment amongst treatment and control bunches was the aftereffect of the program without considering in secret factors.

Likewise, another examination on 32 Sub-Saharan African districts demonstrates that giving sustenance in school under the Food for Education (FFE) conspire added to expanding total enlistment in WFP helped schools by 28% for young ladies and 22% for young men in only multiyear (Lehrer, 2008). Be that as it may, following multi-year, enlistment design demonstrated variety relying upon the sort of FFE program; i.e. in the event that the arrangement of sustenance in school was joined with bring home apportions were offered together, together, young ladies supreme enlistment continued expanding by 30% resulting to

the main year. Then, schools that gave just on-side nourishing have quite recently recorded an increment in a flat-out enlistment that was the same as before the sustaining program was actualized.

Additionally upgrading enlistment along school nourishing projects alters the age at section by pulling in youngsters, amid their correct age. In poor nations like Ethiopia, kids may start essential instruction considerably later than the prescribed age for different reasons. For example, absence of assets, absence of childcare and little mindfulness about the advantage of selecting youngsters amid the prescribed age are a portion of the foundations for late section (Gilligan, 2008).

2.1.4. School feeding program and class attendance

The second pointer of school cooperation investigated in this examination is class participation. Conviction is that school suppers can be powerful at expanding class participation since youngsters get the feast just when they go to class (Adelman, 2008). As examined before, the open-door cost of permitting youngsters to go to class differs crosswise over school days and seasons and this cost could even be higher than the normal advantage. For example in places where tyke work shapes the basic piece of horticultural work amid a specific season or long periods of the year, class participation could be low. In such cases, school dinners may energize participation or not relying upon how the recipients esteem them. In this manner, the estimation of the supper with respect to the distinction between the cost and expected advantage of tutoring additionally decides participation (Adelman, 2008).

Gilligan (2008) demonstrate three parts of nourishment that can impact class participation. Initially, school dinners mitigate here and now yearning of school youngsters amid the school day by giving more supplements to the tyke, furnishing the kid with a supper when he or she doesn't have, or supplanting a feast that would be gotten after school with one amid school hours (Adelman, 2008). In this manner this part of nourishment focuses for here and now affects and empowers youngsters to be taught and take in more Besides, school suppers may likewise create nourishing changes for a kid over long run. The enhanced wholesome status because of school dinners will thus enhance a tyke's physiological limit of learning.

In Jamaica, another examination directed on 814 kids in second-through fifth-grade classrooms in provincial elementary schools where kids were arbitrarily allocated to get a breakfast (576-703 kcal and 27 g of protein) or fake treatment (orange cut with 18 kcal) every day for one school year found a little change in participation rates for youngsters getting breakfast over the control gathering (walker, 11998) Powell, Walker et al. 1998). Be that as it may, this effect is little on the grounds that the participation rates in the two gatherings were around 70 % even before the investigation. Additionally, in Peru, Huaraz found that a school breakfast expanded participation rates of fourth and fifth-grade understudies by 0.58 rate focuses. The assessment occurred 30 days after the beginning of the breakfast program and following those 30 days the breakfast program was likewise executed in the control schools.

2.1.5. School Feeding Program and Students' Repetition

Gilligan (2008) exhibit the transaction between school suppers on one hand and grade reiteration, learning accomplishment, and school execution on the other. They demonstrate that this impact works in two instruments. To start with, in light of the fact that school dinners enhance class participation, youngsters will invest more energy learning in school. So the additional time kids spend in school, the better they learn and these exchanges at last result in enhanced school execution, which along these lines limits the probabilities of drop-out. This is anyway subject to different factors, for example, school quality, accessibility of learning materials and educator quality. In this way, except if appropriately executed, school sustaining

has rather the possibility to exacerbate drop-out (Adelman, 2008).Second, enhanced sustenance may likewise enhance school maintenance and execution in the short and over long run. In the short run, school suppers could reduce craving and enhance youngsters' focus and learn with the goal that school execution will be enhanced and thus drop – out is limited. Over the long haul, school suppers could upgrade learning given that school dinners enhance the healthful status of youngsters and if wholesome status additionally influences learning. Back to (Adelman, 2008) consider in Bangladesh demonstrated that the School Feeding Program has a measurably noteworthy negative effect on understudy drop – out. This investigation uncovers that the elementary school drop – out rate in the program, rustic zone was 29% and that the general fruition rate around there is 6 rate focuses higher than control country regions. Controlling for tyke and family unit attributes, he found that school suppers diminish the likelihood of dropping out of school by 7.5 %.

2.1.6. School Feeding Program and School Participation

Conceptual relationships between school meals and school participation, this section discusses some of the relevant empirical studies. Most of the writing investigated that for this examination uncover SFP have for sure positive effect on school support as estimated by school enlistment, class participation, and understudy drop-out-status (GCNF, 2019). Be that as it may, the vast majority of these discoveries depend on exact information acquired from schools where the program was mainstream and has been moderately successfully actualized. (GCNF, 2019) directed a field – think about in Western Kenya preschools in the vicinity of 2000 and 2004 to assess the effects of school sustaining programs on school interest and accomplishment. In this unique situation, preschoolers are characterized as youngsters between ages of 4 and 6 who lived inside a strolling separation of school. They found that youngsters in the treatment amass took an interest 35.9% of the time contrasted with 27.4% in the examination (control) gathering and this distinction was factually noteworthy.

The program expanded support of the two kids who were beforehand enlisted (what they call escalated edge) and kids who might have gone to class without the program (broad edge). Since there are solid complementarities between educator attributes and school meal is, they stress that any expansion in school 29 interest without qualified training misses the mark concerning better instructive accomplishment Nevertheless, their study was on preschools and hence this may not have much relevance for primary school children. Besides, preschoolers are early-age children and may not have family obligations like many primary school age children might have in poor areas. Thus preschoolers are relatively free of duties that could keep them away from school. Another study conducted in Jamaica shows that school meals indeed improve education of beneficiaries (Chang, 2008).

3. Research methodology

This chapter shows various methods which were used in data collection, research design i.e. how data was collected, population, sample selection, research instruments and methods of data analysis.

3.1. Research design

The research design of this study is mixed method in fact, the existing problem is described referring to the influences of educational project on student learning outcome in Rwanda in study area at Rubavu district, from the problem different objectives are highlighted and to gather adequate data respondents taking into account the selected sample size.

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3.2. Target population and sampling

This study was done at 4 twelve years' basic education located in the Rubavu district targeting 2112 respondents including parents who are involved in school feeding committee, learners, and staff members (head teacher, DOS and Teachers).

This study employed a model developed by Nyanamba (2000) that was suitable use in my study and to determine the sample size of respondents who participate in the primary data collection as reflected

$$n = \frac{N}{1 + N(e)^2}$$

Where **N**= Population
e= Margin Error (8%)
For this, **N**= 2112
e = 8%

$$Sample = \frac{2112}{1 + 2112(0.05)2} = 336$$

The non-probability sampling method was used to select purposively the institutions and the total number of the total population with a school to participate in the study. These were selected in relation to the literature reviewed. The purposive sampling technique was used in selecting different respondents in the schools. For the probability sample method, the simple random sampling was used specifically in selection of respondents.

3.3. Data collection methods and instruments/tools

Instruments are tools which are used for collecting data and information from the field. The tools to be used are scheduled as follows:

Questions to be administered to respondents were both closed-ended and open-ended ones. Regarding closed-ended questions, respondents were asked to choose one answer from a given list of answers, whereas open-ended questions were replied by each respondent in his/her own words.

The interview was also used, it refers to the oral communication between interviewee and interviewer and the answers should be answered in verbal ways of exchanging information (Kothari, 2004). Interview was used in research, where the interview guide was used for collecting information on staff.

3.4. Data analysis

The data collected was analyses using quantitative and qualitative methods of data analysis. For quantitative the researcher was first ready for analysis then descriptive statistics in terms of percentages used in data analysis. In addition, various activities were performed to ensure a better processing of data. This analysis was effectively run by focusing on the use of software known as SPSS. Its name originally stood for Statistical Package for the Social Sciences. SPSS is a widely used program for statistical analysis in social sciences. Some of the statistics included in the base software are descriptive statistics: tabulation, frequencies.

4. Research findings

In this chapter, the findings are going to be presented, analyzed, and interpreted.

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4.1 Presentation of findings through descriptive statistics

This section presents the answers collected from the questionnaires given to the respondents. The answers were transformed into descriptive statistics, and they are presented in tables below.

Table 1: Descriptive Statistics on Food ratios and timing of meals

Statements	N	Min	Max	Mean	Std
In this school students changes the type of foods	336	1.00	5.00	4.0060	1.42052
In this school foods quantity served to the students depending on classes	336	1.00	5.00	4.2173	1.17834
In this school food quantity served to Students depending on ages	336	1.00	5.00	4.2976	.98986
In this school students get satisfied with the food served to them	336	1.00	5.00	4.3661	1.12499
In this students takes lunch on constant time	336	1.00	5.00	4.0655	1.28662
In this school giving leaners sufficient food increase their academic performance	336	1.00	5.00	4.1815	1.24340
This school has enough food store	336	1.00	5.00	4.0417	1.43664
In this school students take breakfast on scheduled time	336	1.00	5.00	4.1220	1.36042
In this school parents provide school feeding contribution to supplements reserved money for the program	336	1.00	5.00	4.1429	1.32388
In this students get enough time for lunch	336	1.00	5.00	4.0744	1.32838
Overall	**336**			**4.1515**	**1.269305**

Source: research data
Note: Strongly Disagree = [1] = **Very Low mean;** Disagree= [1-2] =**Low mean;** Neutral= [2-3] =**moderated mean**; Agree= [3-4] =**High mean**; Strongly Agree= [4-5] = **Very High mean**

The results in table 1, show the opinions of respondents about different statements defining food ratios and timing of meals. These statements have effect on learning outcomes. Considering the mean from responses, it is clear that statements are in the following category: high mean. The results in all these categories show that the respondents agreed with the statements related to the food ratios and timing of meals on learning outcomes. Statements with very high mean are: In this school students changes the type of foods (μ=4.0060 and STD=1.42052), In this school foods quantity served to the students depending on classes (μ=4.2173 and STD=1.17834), In this school food quantity served to Students depending on ages (μ=4.2976 and STD=0.98986), In this school students get satisfied with the food served to them (μ=4.3661 and STD=1.12499), In this students takes lunch on constant time (μ=4.0655 and STD=1.28662), In this school giving leaners sufficient food increase their academic performance (μ=4.1815 and STD=1.24340), This school has enough food store (μ=4.1220 and STD=1.43664), In this school students take breakfast on scheduled time(μ=4.1220 and STD=1.36042), In this school parents provide school feeding contribution to supplements reserved money for the program(μ=4.1429 and STD=1.32388), In this students

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get enough time for lunch(μ=4.0744 and STD=1.32838). The overall mean indicated that majority of respondents strongly agreed that food ratios and timing of meals have significant influence on learning outcomes as indicated by (μ=**4.1515** and STD=**1.269305**).

Table 2: Descriptive Statistics on quality of the food

Statements	N	Min	Max	Mean	Std.
In this school has refrigerant which keeps biodegradable things	336	1.00	5.00	4.0744	1.23039
In this school foods served is really well cooked	336	1.00	5.00	4.3036	1.28253
In this students are given food which contain all different categories of vitamins	336	1.00	5.00	4.0030	1.39829
The foods served is clean and has no sand or any other rubbish	336	1.00	5.00	4.0298	1.34686
Students are served warm foods	336	1.00	5.00	3.7887	1.35161
The meals which are served is too tasty	336	1.00	5.00	4.1190	1.19356
In this schools students are given food which contains minerals	336	1.00	5.00	4.1756	1.06594
In this schools learners are given food which contains unsaturated fats	336	1.00	5.00	4.6161	.78317
In this school, students are given food which contains proteins	336	1.00	5.00	4.6815	.78972
In this students are given food which contains enough vegetables.	336	1.00	5.00	4.4077	1.08055
Overall	**336**			**4.21994**	**1.152262**

Source: research data
Note: Strongly Disagree = [1] = **Very Low mean;** Disagree= [1-2] =**Low mean;** Neutral= [2-3] =**moderated mean**; Agree= [3-4] =**High mean**; Strongly Agree= [4-5] = **Very High mean**

The results in table 2, show the opinions of respondents about different statements defining quality of food. These statements have effect on learning outcomes. Considering the mean from responses, it is clear that statements are in the following category: very high mean. The results in all these categories show that the respondents agreed with the statements related to the quality of food on learning outcomes. Statements with very high mean are:

In this school has refrigerant which keeps biodegradable things (μ= 4.0744 and STD=1.23039), In this school foods served is really well cooked(μ=4.3036 and STD=1.28253), In this students are given food which contain all different categories of vitamins(μ=4.0030 and STD=1.39829), The foods served is clean and has no sand or any other rubbish(μ=4.0298 and STD=1.34686), Students are served warm foods(μ=3.7887 and STD=1.35161), The meals which are served is too tasty(μ=4.1190 and STD=1.19356), In this schools students are given food which contains minerals(μ=4.1756 and STD=1.06594), In this schools learners are given food which contains unsaturated fats, In this school(μ=4.6161 and STD=0.78317), students are given food which contains proteins(μ=4.6815 and STD=0.78972), In this students are given food which contains enough vegetables(μ=4.4077 and STD=1.08055). The overall mean indicated that majority of respondents strongly agreed quality of the food have significant influence on learning outcomes as indicated by (μ=**4.21994** and STD=**1.152262**).

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Table 3: Descriptive Statistics Materials and workers used in food preparation and serving.

Statements	N	Min	Max	Mean	Std.
This school has well-built kitchen in modern way	336	1.00	5.00	4.5060	1.19700
This school has got a water purifier	336	1.00	5.00	4.5952	.81945
We have spacious dining hall in our school	336	1.00	5.00	4.1935	1.26069
In this each learner has his/her own materials to use in while taking the meals	336	1.00	5.00	4.5655	.85092
The school have enough stove and materials to use for cooking	336	1.00	5.00	4.6786	.53889
This school has enough staff of students to test the quality of meal served to their schoolmates	336	1.00	5.00	4.4048	1.27543
This school have enough workers to prepare the meals for student	336	1.00	5.00	4.3750	1.05484
This schools has expert to test the quality of food to be cooked for the learners	336	1.00	5.00	4.2024	1.60060
The cookers in this schools have been given training about preparing balanced diet.	336	1.00	5.00	4.4732	1.24080
In this school, learners have a voice to decide the category of food to be prepared for them	336	1.00	5.00	4.3363	1.33941
Overall	**336**			**4.43305**	**1.117803**

Source: research data
Note: Strongly Disagree = [1] = **Very Low mean;** Disagree= [1-2] =**Low mean;** Neutral= [2-3] =**moderated mean**; Agree= [3-4] =**High mean**; Strongly Agree= [4-5] = **Very High mean**

The results in table 3, show the opinions of respondents about different statements defining quality of food. These statements have effect on learning outcomes. Considering the mean from responses, it is clear that statements are in the following category: very high mean. The results in all these categories show that the respondents agreed with the statements related to the Materials and workers used in food preparation and serving on learning outcomes. Statements with very high mean are: This school has well-built kitchen in modern way(μ=4.5060 and STD=1.19700), This school has got a water purifier(μ=4.5952 and STD=0.81945), We have spacious dining hall in our school(μ=4.1935 and STD=1.26069), In this each learner has his/her own materials to use in while taking the meals(μ=4.5655 and STD=0.85092), The school have enough stove and materials to use for cooking(μ=4.6786 and STD=0.53889), This school has enough staff of students to test the quality of meal served to their schoolmates(μ=4.4048 and STD=1.27543), This school have enough workers to prepare the meals for student(μ=4.3750 and STD=1.05484), This schools has expert to test the quality of food to be cooked for the learners(μ=4.2024 and STD=1.60060), The cookers in this schools have been given training about preparing balanced diet(μ=4.4732 and STD=1.24080), In this school, learners have a voice to decide the category of food to be prepared for them(μ=4.3363 and STD=1.33941). The overall mean indicated that majority of respondents strongly agreed Materials and workers

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used in food preparation and serving have significant influence on learning outcomes as indicated by (μ=**4.43305** and STD=**1.117803**).

Table 4: Descriptive Statistics learning outcomes

Statements	N	Min	Max	Mean	Std.
In last five years, learners behavior changed	336	1.00	5.00	4.1220	1.12767
In last five years learners motivation increase	336	1.00	5.00	4.0833	1.32672
In last five years students' academic performance increased	336	1.00	5.00	4.0149	1.44648
In last five years, learners attendance increased	336	1.00	5.00	4.1101	1.28937
In last five years, learners repetitions reduced	336	1.00	5.00	4.0327	1.35893
In last five years, learners performance in national examination increased	336	1.00	5.00	4.1429	1.22796
In last five years, school dropout reduced	336	1.00	5.00	4.3333	1.02603
In last five years, learners performance in school based exams increased	336	1.00	5.00	4.0208	1.30539
In last five years, learners dodging the school reduced	336	1.00	5.00	4.0030	1.16028
In last five years, learners scores increased	336	1.00	5.00	4.0536	1.12639
Overall	**336**			**4.09166**	**1.23952**

Source: research data

Note: Strongly Disagree = [1] = **Very Low mean;** Disagree= [1-2] =**Low mean;** Neutral= [2-3] =**moderated mean**; Agree= [3-4] =**High mean**; Strongly Agree= [4-5] = **Very High mean**

The results from table 4, indicated that the majority of respondents strongly agreed that learning outcomes was increased since the introduction of school feeding program those factors are described as follow: In last five years, learners' behavior changed(μ=4.1220 and STD=1.12767), in last five years' learners' motivation increase(μ=4.0833 and STD=1.32672), In last five years students' academic performance increased(μ=4.0149 and STD=1.44648), In last five years, learners attendance increased(μ=4.1101 and STD=1.28937), In last five years, learners repetitions reduced(μ=4.0327 and STD=1.35893), In last five years, learners performance in national examination increased(μ=4.1429 and STD=1.22796), In last five years, school dropout reduced(μ=4.3333 and STD=1.02603), In last five years, learners performance in school based exams increased(μ=4.0208 and STD=1.30539). In last five years, learners dodging the school reduced(μ=4.0030 and STD=1.16028), In last five years, learners scores increased(μ=4.0536 and STD=1.12639). The overall mean indicated that majority of respondents strongly agreed that learning outcomes was increased since the introduction of school feeding program as indicated by (μ=**4.09166** and STD=**1.23952**).

4.2. Summary on tested hypotheses

Multiple correlation which was done in the study using Statistical Package for Social Science (SPSS) indicated that there is very strong correlation between school feeding program and learning outcomes. Means that school feeding program brought great change in education as stated by most of the respondents the program contributes to learning outcomes in 12 Years Basic of education schools in Rubavu district/ Rwanda.

Table 1: Summary on tested hypotheses

Nº	Hypotheses	P Value	Verdict
1	There is no significant influence of food ratios and the timing of the meals on learning outcomes in Twelve Years basic education schools of Rubavu district.	.000	Rejected
2	There is no significant influence of food ratios and the timing of the meals on learning outcomes in Twelve Years basic education schools of Rubavu district.	.001[b]	Rejected
3	There is no significant influence of required materials in serving the food on learning outcomes in Twelve Years basic education schools of Rubavu district.	.001[b]	Rejected

The study had three null hypotheses: **Ho1:** There is no significant influence of food ratios and the timing of the meals on learning outcomes in Twelve Years basic education schools of Rubavu district, **Ho2:** There is no significant influence of food quality on learning outcomes in Twelve Years basic education schools of Rubavu district and There is no significant influence of required materials in serving the food on learning outcomes in Twelve Years basic education schools of Rubavu district. All null hypotheses were reject as indicated by the results of the research. Means that all alternative objective has significant influence on learning outcome.

5. Conclusion

The research concludes that food ratios influences school learning outcome such as providing enough food like quantity and giving them food on time it enhances teaching and learning process. Also by providing quality food to learners, there is improvement of learning outcomes because it contains all nutrients needed by leaner to grow physically and mentally. another aspect required material led to school feeding program to function well as we have seen that once there is that program, there is reduction of drop out, increased school attendance, and increased school enrollment rate.

6. Recommendations

For making school feeding program very successful, here they are some of recommendation:

Government has to mobilize more stakeholders or non-government organization to orient their funds in the implementation of school feeding program.

Government should make monitoring and evaluation of school feeding program because some of the school do not put more effort in its implementation.

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