Improving and Enhancing Meal Participation by Learners in the School Feeding Programme in Selected Eswatini High Schools

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Abstract: **- School feeding (SF) has been made headway globally since the early 1940s having started in Latin American countries to improve health, educational performance and attendance of school age children. The purpose of this study was to identify possible strategies that may be applied to improve meal participation by learners in Eswatini high schools. It is a case study of four selected high schools in Shiselweni region, Hlathikhulu boundary. Low or non-participation has raised concern about SF effectiveness in addressing hunger issues among high school learners. The study adopted a descriptive survey design employing a mixed method using semi-structured interviews and survey questionnaires. Population of the study was high school learners and SF facilitators from randomly selected high schools in Shiselweni region. Statistical Package for Social Sciences (SPSS) version 20.0 was used to analyze the quantitative data employing descriptive statistics, while qualitative data employed a theoretical thematic analysis. Findings of the study established that SF is an appropriate safety net for high schools. Possible strategies for improvement for SF effectiveness included: 1) Provision of variety in menu, 2) Extra funding, 3) Involvement of learners in menu development, 4) Nutrition education for learners and 5) Local community involvement in SF. It was recommended that, for SF effectiveness to be attained, governments should secure extra funding and support projects that would generate funds, such as vegetable production and partnering with local farmers for supporting SF, making it cost effective.**

Index words: **Hunger, In-school feeding, Intervention strategy, Nutrition, School feeding, Take-Home Rations**

I. INTRODUCTION

School Feeding (SF) is a globally recognized safety net, which governments are to adopt and use in schools, especially in developing countries. Furthermore, SF are school meals (SMs), meant to address issues of food security and provide support for the learners' education towards a sustainable future (World Food Program Report, 2016). According to WFP, developing countries use SF as an instrument for achieving the Millennium Development Goals targeted for food insecure populations residing in areas with highly concentrated poor families. Moreover, SF is intended to assist schools with poor attendance and enrollment to improve. According to Galliano (2009), learners who go to class without food tend to lose focus during teaching. Furthermore, Otsuki and Arce (2007) supported the assertion by Galliano and stated that SF is part of the framework of food security policy and purposes to cut down the number of ill-fed children by providing healthy, good quality food for children as a way to promote people's eating habits. SF provides access to food for all learners in order to impact positively on their nutritional status, gender equality, and educational outcomes.

WFP has supported several countries in Africa to run SF. According to the World Food Program (2016), the African Union (AU) and the United Nations recognize SMs as the world's most widely used safety net with a vital role in education. The report states that there are more than 10 million children who were reported as beneficiaries of WFP school meal programs in 41 countries by 2014, and these children who received SF in 131countries, primarily through government systems are assisted by WFP (WFP, 2016). Furthermore, on the Africa Day of SF, the African Union Heads of State and Government adopted a new approach, as a safety net, to link SF with local food production and to enable food access and stimulate local markets. As SF covers the continent of Africa, it becomes pertinent to take a closer look at SF in the context of Eswatini, a developing country. The country has also engaged in SF with the same assistance from WFP as shown in the subsequent discussion of Eswatini SF (WFP, 2016).

Eswatini is a developing country, where SF has been part of the education system since pre-independence times and was initiated and supported by Save the Children Fund (SCF) of the United Kingdom in 1961 and piloted in Mbabane and Manzini, providing for primary schools in the rural areas. More assistance came in 1965 from the World Food Program (WFP), which started supporting the then called feeding scheme. Parents paid a minimum charge towards SF as supplement aid. However due to costs entailed in SF, it stopped for a few years. However, due to the impact of HIV/AIDS, drought and the resultant food insecurity on quality of learning, SF was reintroduced in 2002 in response to these occurrences. WFP funded the programme until 2014 when the Eswatini Government took over as the sole overseer. In-School Meals, is the type of SF used in the country, where rice and beans are served for the lunch meal (NFFSS, 2015).

Carrying on from where WFP left off, the Ministry of Education and Training (MOET) with the National Emergency Response Council on HIV/ AIDS (NERCHA), developed a national food security implementation framework for schools. This was with the intention to guide the provision of uniform food security and nutrition outcomes for all learners in Eswatini. Additionally, the framework, named National Framework for Food Security in Schools (NFFSS) and was designed to provide a platform upon which schools can improve a collective operation of various programs in order to enhance food security and improve on initiatives already in existence. The NFFSS suggests the integrative model of operation which includes standards such as, School Meal Standards, School Gardens, Nutrition Education, and Integration. The Integration Standard, entails using integrative and collaborative implementation among units within schools and within the Ministry of Education and Training, as well as other Government departments (NFFSS, 2015).

According to Nsibande (2016), when children go for lessons without having eaten anything, they tend to lose focus. Hence, providing school meals and social protection programs that are in line with the needs of children, can ensure the security of every learner. Moreover, there has been scarcity of studies on addressing hunger levels and issues among learners and hunger being the main barrier to effective learning, this study was thus carried out. Eradication of all barriers to academic achievement should be done through undertaking to meet the needs of all learners, as suggested in inclusive education. Accordingly, SF is an appropriate mechanism that can improve thinking skills and outcomes through reducing absenteeism and learners will be more attentive and concentrate in class as their nutrition is improved and short-term hunger eradicated (Kazianga, Walque, & Alderman, 2009).

Clearly, SF is a vital support for educational achievement for learners, and in line with SF significance, the next important issue to look at is school meal participation (SMP) among learners, which has a direct or indirect effect on the success of SF. There are components of school meal participation that should be considered during implementation of SF, for instance, food quality, presentation and satisfaction. Some researchers relate meal participation to food presentation, which involves the element of satisfaction. According to Namkung et al (2007), food presentation constitutes food quality and influences the appetite of the customer and their views about food quality. Presentation relates to food preparation and the food service to the customers, which in the school context, are the learners.

Presenting a good-looking and well-garnished food can stimulate customer satisfaction towards food quality and encourage meal participation (Shaharudin et al., 2011). Studies indicate that presenting food actually has all to do with consumer perception of the value of the product physically or internally (ingredients). Basically, food presentation entails how food is served. Food should be served attractively to stimulate appetite of the consumer. According to Zampollo et al, (2011) presentation includes use different colors, components, texture, shape and arrangements of foods which together pleasantly and appropriately create a pleasing combination on plate and promote meal participation. SMP is a tool that may be used to achieve SF effectiveness towards improved educational outcomes and sustainable education. Learners should be encouraged to participate in the meals provided at school through use of numerous strategies. Such strategies, involve taking into consideration the various school contexts and views of all stakeholders, including learners. It is the responsibility of the federal government and all bodies involved to ensure provision of nutritious and healthy meals. Furthermore, teachers, parents, school nurses and SF facilitators should assist learners to learn to eat SMs at the primary, secondary and high school levels in order to improve their academic achievement.

II. THEORETICAL FOUNDATION AND LITERATURE REVIEW

Significant to strategies associated with the theorized SF effectiveness is the Theory of Reasoned Action and Planned Behaviour (Fishbein and Ajzein, 1975; Ajzen and Fishbein, 1980). It is among the most influential and widely applied theories on the link between attitudes and behavior. It is framed simply, yet logically to measure the relationship between beliefs, attitudes, subjective norms, intentions and behavior, which are interrelated and result in behavioral intentions. Basically behavioral intentions constitute an intermediate variable between attitudes/subjective norms and behavior (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980). Behavior patterns, like eating healthy, are not always perceived to be under the full volitional control of a person (Ajzen, 1985). This researcher extended the Theory of Reasoned Action with a new variable to account for factors outside of a person's full control. He came up with the Theory of Planned Behavior which suggests that when an individual has a favorable attitude towards a given behavior, perceives that significant others want him or her to perform this behavior, he/ she feels capable of adopting that behaviour.

Hence, the overarching idea of testing the theory in the field of healthy eating is delineating the main psychological causes of these behaviors. This knowledge provides basis for predicting and influencing behavior. A number of studies have been conducted to investigate how well the Theory of Planned Behavior predicts healthy eating behavior among young people. According to Fila and Smith (2006) sex differences do exist between eating habits of boys and girls. Further supporting that notion was Chan and Tsang (2011) who reported that perceived behavioral control, attitudes toward healthy eating and subjective norms indicated variance in behavioral intention in boys and girls. However, the overall, the most predictive barrier to healthy eating was the availability and taste of foods (Fila & Smith, 2006).

2.1 Strategies for Improving Participation in School Meals

Certain changes in the nutritional characteristics of foods served, may change student participation rates. Student perception of the quality of the meals also is important concern for consideration in relation to level of participation in SMs (Olsho et al., 2016). Firstly, it is imperative to provide variety when serving meals, especially when it is meant for adolescents. Options could include vegetarian options alongside meat based options on certain days and alternative food options such as porridge instead of rice are important. Additionally, consideration of learner needs and their interests for the alternative food items is pertinent for relevance of meals. Of significance, is also considering the school context and make meals that are suitable and appealing. The different colours, components, texture, shape and arrangements of foods works together pleasantly and appropriately in order to form pleasing combination on plate and to stimulate the appetite causing learners to partake in the meals (Zampollo, Kniffin, Wansink, & Shimizu, 2011). Student perception of the quality of the meals also is a concern. Therefore changes in the nutritional characteristics of foods served, may change student participation rates (Olsho et al., 2016).

Meals provided at school should be healthy, that is, balanced, palatable and appealing. Meals that are healthy include those providing food items from the three food groups, for example, this includes, provision of more fruits, whole grains, low-fat milk, less fat and salt, as well as healthier snacks and beverages. Obtaining input from learners and parents about food items that they would like to see served in the meals, is imperative if meals are to be appealing to learners. Additionally, arrangements of foods must work together pleasantly and appropriately in order to form pleasing combination on plate (Zampollo, Kniffin, Wansink, & Shimizu, 2011). It is essential that provision of healthy, palatable food and sustainable food behaviours, such as in school garden projects, focusing on sustained intake of healthier foods inside and outside of school, is ensured (Suarez-Balcazar et al., 2014; Roccaldo et al., 2014).

Secondly, during development of the menu items, it is important to consider learner involvement and their interests as the alternative food items are provided. Consider the school context too and make meals appealing. This supports the assertion by Namkung et al. (2007), that food presentation is a factor that constitutes food quality and may influence the appetite of the people who will eat it and their perception of food quality. Ultimately, each of the potential improvements above, were listed as drawbacks to participation in the SFP, or reasons why students do not participate in school meals. Therefore, improvements were necessary in order to encourage non-participants towards school meals.

Thirdly, the view of food being an instrument for education is not quite familiar in mainstream curricula (Weaver-Hightower, 2011). Moreover, a balanced and nutritious diet feeds the mind and the body, and several studies have shown that learners who eat well, perform better at school. Evidence has also been established that practical cooking and gardening lessons help to develop children's scientific and environmental understanding. Additionally, learning about food and nutrition in the school meal setting, can help learners to gain both social and practical food skills (Harper and Wells, 2007). In that context, nutrition education is adequately used as a tool for sustainability in the context of agricultural, social, and political systems (Stone et al., 2007). Integration allows for 'the power of doing', whereby learners are involved in growing, preparation, and consumption of food within a culturally relevant setting. More lessons on food preparation and gardening in the mainstream curriculum are vital for learners' appreciation for food, more appreciation for self-produced food; and aroused interest to try uncommon healthier food choices, which then serves as the beginning of a journey towards nutritious and sustainable food behaviors (Morris et al., 2001). Nutrition education further permits appreciation of the food by learners which they have produced by themselves (Dohle et al., 2014).

Lastly, local community farmers could play a significant role as part of SF structure e.g. local farmers being roped in to support SF and making it cost-effective, where food items are procured cheap and at the same time farmers benefitting from sales to schools. These findings are consistent with those of Cole (2007) who argued that community participation is considered necessary to get local community support for planning and development. The findings also concur with the Young, (2005) who observed that with local involvement, communities become a valuable resource for schools and contribute significantly to the sustainability of health promotion interventions as well as supply of locally grown food from local farmers.

2.2 Statement of the Problem

African nations continue to prioritize SF through policy and legislation, to improve retention, attendance and performance of learners in school as well as generating economic growth. They have successfully implemented SF at national and sub-national levels, and have optimised and enhanced their own national SF programmes (Drake, Woolnough, Burbano & Bundy, 2016). SF basically addresses hunger which has an impact on learners' focus during lessons and also ensures the security of every child as well as result in effective learning (Nsibande, 2016). Hunger is also among key barriers to academic achievement, hence SF is undertaken by governments to meet the needs of all learners, as suggested in inclusive education.

Meal participation contributes to effectiveness of SF. However, there are other factors which determine the extent to which learners will participate in SMs, including variety in menu items, food quality and service. Low or non-participation is prevalent in high schools in Eswatini. Documentation on meal participation in high schools in Eswatini has not been adequately done and effectiveness of

SF remain questionable, as most high school learner continuously feed on junk food as opposed to partaking in SF, with a participation rate of 50% of school enrolment in high schools.

The purpose of the study was to identify possible strategies to improve learner participation in SMs in high schools. A case of 4 schools in Shiselweni region. The objectives were to:

1) Determine the level of participation among learners in Eswatini high schools in the Shiselweni region;
2) Identify possible improvement strategies to enhance learner participation in SMs in high schools in the Shiselweni region.

III. METHODOLOGY

3.1 Research Design

The study adopted a descriptive survey research design employing a mixed method approach, to explore factors contributing to the effectiveness of SF, a case of learners from selected high schools in Shiselweni. A research design refers to the logic or master plan of research that throws light on how the study is conducted. Therefore, a research design can be comparable to an architectural outline. Similarly, Burns and Grove (2003) defined a research design as a blueprint for directing the study with supreme control over factors that may affect the validity of the results. This study is a descriptive research that employed a mixed method approach, an approach that focuses on both quantitative and qualitative data in a single study. Furthermore, the mixed method has its central premise, which is using quantitative and qualitative approaches, together to give a better understanding of research problems compared to using one approach.

3.2 Sampling

This section comprises information on subjects to be studied, who according to Mugenda and Mugenda (2009) are the target population the researcher is interested for obtaining data and drawing conclusions from. This population comprises an aggregate of individuals with the same characteristics, with regards to a particular study. Finally, findings are generalized from this population Kothari Buddi, and Sawhney, (2008). With respect to this study, the population shall comprise, one Cook, one Focal teacher, and high school learners from the selected high schools in Shiselweni. A purposive sampling procedure was employed to identify the subjects, which included, the cooks and the focal teachers because they are directly involved in running SF. Purposive sampling refers to a quantitative sampling in which the available and reachable members of the population are sampled because they contain rich knowledge about the issue under study (Creswell, 2012). Simple random sampling technique was be used to select 60 high school learners per school, 1 SF cook, and 1 focal teachers from each of the 4 randomly sampled high schools in Shiselweni.

3.3 Instrumentation

Data collection involves use of instruments designed to suit the type of data required, such as quantitative and qualitative data. According to Maluleka (2008), the qualitative research approach has various data collection strategies, including the use of interviews, observation, focus groups, diaries, photographs, official documents and newspaper articles. Alternatively, questionnaires and experiments are used to collect quantitative data. Collection of data for this study involved use of a semi-structured interview guide for qualitative and survey questionnaires were used to collect quantitative data. A letter was obtained from the university to seek permission from the Ministry of Education and Training (MOET) to conduct the study, school cooks, focal teachers, and the form four learners from the selected high schools. To control non-response, research instruments were administered by the researchers in each school and the language in the questionnaire was simplified for the form four learners.

The content, construct and face validity of the instrument were established by giving it to panel of experts in the MOET nutrition inspectors and lecturers in the Department of Consumer Science Education and Community Development of the University of Eswatini to validate the instruments. Comments from these experts helped the researcher to rephrase some of the questions and structure of the questionnaires and interviews. The instruments also needed to be reliable. To establish reliability of instrument, a pilot test was done with 30 pupils from one school that did not participate in the study from the Shiselweni Region, because they have the same characteristics as the targeted population to avoid contaminating the target population. The Cronbach Alpha was used to establish internal consistency coefficient (r). The coefficient at 0.8 was accepted to indicate high degree of relatedness.

3.4 Data Analysis

To analyze data, the statistical package for social science (SPSS version 20.0) for windows was used. Quantitative data from the questionnaires was classified, tabulated and analyzed according to the objectives of the study. To analyze the qualitative data, the thematic analysis was used. The qualitative data were analyzed using the thematic analysis, which involved, getting familiar with data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and writing the report. (Braune & Clarke, 2006).

IV. FINDINGS AND DISCUSSION

4.1 Level of Participation of High School Learners in SMs

The interview responses indicated that, as far as participants were concerned, there is a high response by learners during mealtimes, which is a positive sign of participation of high school learners in SMs. However, some learners do not eat SMs due to problems relating to the type of food served. Findings indicated that, three factors influenced the level of

participation, namely, learners' response during mealtimes; socio-economic status; and level of satisfaction. Responses from participants are discussed under the sub-themes, as follows:

4.1.1 Learners' response during mealtimes

Learners' response during mealtimes is one important yardstick that greatly influences the effectiveness of SF. In order to ascertain the level of participation in school meals by high school learners, the response by high school learners during mealtimes emerged as one of the indicators for level of participation in this study. During the interviews, participants stated that, the level of participation in relation to learners' response during mealtimes was moderately high. They mentioned that a substantial number of learners show up at mealtimes responding to school meals, which is a positive sign that many of the learners want the food, even though they could not say exactly, how many they were. Participant 2 expressed that:

"The number of learners who show up during meal-times was high which showed a high level of participation in the SMs by the learners in this school. This means that, a majority of the learners eat SMs."

Participant 2 further explained that the high level of participation shown in the number of learners during mealtimes was motivated by the fact that most of these learners come from disadvantaged backgrounds. This suggests that majority of learners show up for meals, as most of nowadays learners come from disadvantaged backgrounds resulting from the HIV/ AIDS pandemic, they are orphans with very little to eat at home and some with absolutely nothing to eat, and school meals are the only meals they have. Hence, they eat from the school meals. However, the participants still reported that as much as the response towards SMs among the high school learners, was high, there was a minority of high school learners who did not eat SMs. School B Participant 3 suggested that these learners do not like the kind of food cooked.*"The few learners who are not eating are probably those who are irritated by the beans in their system or those who carry money to school and then buy from markets and shops next to the school. However, that is rare because most of our learners are needy."*

Similarly, Participant 5 observed that as much as SMs were a good intervention and most learners participated in them, some learners do not eat due to reasons of illness, dislike for the food and most probably monotony of meals. The head teachers make every possible effort to purchase ingredients needed to improve the taste of the food, such as carrots and onions. Moreover, head teachers in some of the schools commit to buying cows, so that beef stew can be cooked and served as an alternative to beans, to create variety in SMs, which then makes the meals appetizing and provide the necessary meal variation. Participant 5 added that:"*Most of these learners do eat, there are few learners who may not eat, but in my school, the ones who do not eat beans are provided with a provisional relish which is made for those learners who do not eat beans. This means there are fewer learners that are not eating school meals. The few include, those who carry packed lunches and those who have money carried to school which they then use to buy from markets and shops around the school."*

In conclusion, findings with regard to level of participation, based on the number of learners seen during mealtimes, indicated that, the majority of high school learners go for meals in their :numbers, which is a positive response towards SMs. The other participants, namely, participants 1, 2, 4, 6, 7, and 8, shared the same sentiments to the effect that they had also witnessed a large number of learners going for the school meals during mealtimes, even though there were not sure how many of them went for the meals. This finding generally indicates that, currently, a majority of high school learners participates in SMs and the other fraction does not participate.

4.1.2 Socio-economic status of learners influencing participation rate

SF is a very important and necessary nutritional intervention, especially for learners in the 21st century, where the world population comprises people that have been hit hard by the prevalence of HIV/AIDS pandemic. The outcome of the pandemic has continuously left a number of households with poor livelihoods and food insecurity. Evidently, sustainable programmes should be put in place and their effectiveness should be ensured. The situation in Eswatini is such that the effects of the pandemic has left a compromised socio-economic status with households that have no food and such families are headed by children.

As a matter of fact, most participants revealed that a majority of learners found in the selected schools, were the Orphaned and Vulnerable Children (OVC), who are from disadvantaged backgrounds, where there is either very little to eat or no food at all. Moreover, that is to be blamed on HIV/ AIDS, which has resulted in the OVC forming a majority in school enrolments, therefore, a large number of learners ate from the SMs and actually needed these meals. Participants in School A, Participant 2 stated:*"School feeding is an excellent programme because, most of nowadays learners come from disadvantaged backgrounds resulting from the HIV/ AIDS pandemic, they are orphans with very little to eat at home and some with absolutely nothing to eat, and school meals are the only meals they have. Hence, they eat from the school meals due to the low socio-economic status that cannot provide for their nutritional needs."*

On the same note Participant 4, echoed this observation, citing the fact that, SMs not only act as intervention but actually aim to ensure saving the lives of the victims of HIV/ AIDS, which are the OVC. Thus, Participant 4, added:*"SF is a mitigation programme aimed at saving the lives of the learners, severely affected by HIV/AIDS disaster and these are among those who participate more in SMs. It is a good and*

necessary programme to be run in schools, especially in helping the less privileged learners who come from poor households to at least have something to live by."

Therefore, these findings indicate that SF has multiple aims focusing on helping the vulnerable learners in low socio-economic status, which include the one highlighted by Participant 4, which is, protecting the needy learners and helping them survive through providing them with food that will relieve them from hunger. In other words, the findings suggest that HIV/AIDS has lowered the socio-economic status for people in certain households, which has resulted in household food insecurity. Therefore, learners in most of today's schools find refuge in SF to address short-term hunger, and the findings have revealed that most of these learners actually are among the majority, which participate in SMs.

However, according to the findings of this study, there are students who have a better socio-economic background. These are the ones, who form the minority of learners not eating from SMs. When interviewed, participants indicated that such learners might be the ones who do not eat in SF or those who do not eat always. A participant in School B, Participant 3 stated: ***"****The few learners who are not eating are probably those who are irritated by the beans in their system or those who carry money to school and then buy what to eat from markets and shops next to the school."*

This explains that learners from elite families are selective about the kind of food they eat, and they are likely to eat the SMs, depending on what is cooked. This is why some head teachers provide slaughter of cows to ensure participation in meals. Therefore, based on the findings, participants 1, 5, 6, 7 and 8, concurred with the above observations and noted that socio-economic status is one of the factors, which propels learners to participate in SMs. Apparently, high schools comprise a high number of learners who are of a low socio-economic status and disadvantaged with a state of food insecurity at home. Therefore, these learners form the majority of those seen during mealtimes. However, there are still learners who are of average to high socio-economic status, who have an option to eat or not to eat SMs. Such learners' participation in SMs is low and fluctuates.

4.1.3 Level of satisfaction and participation rate

As SF is an intervention that involves eating, the element of satisfaction cannot be overlooked. Moreover, the level of satisfaction is an important factor in explaining effectiveness of SF, because, the more satisfied the learners are, the more they will participate in SMs. When interviewed, participants revealed that the food portions were satisfactorily sufficient, and the learners are satisfied. More so participants during the interview, confirmed satisfaction of learners by the SMs and revealed that they cook enough to make sure every learner gets enough to be satisfied. Participant 6 stated:*"The learners are satisfied because we cook enough food to ensure everyone gets it. We also ensure cooking a mixed vegetable relish for those who do not eat the beans for one reason or the other.*

Similarly, Participants, 2, 4, and 5 noted that learners, particularly the boys, are happy when large quantities of food are served. This finding is consistent with the socio-economic factor that the lack food at home. Participant 6 even added: "*So yes, the learners are satisfied and more than just that, they actually need the food."*

Based on these same findings, it was noted that besides the learners, the parents to the learners were also satisfied with the provision their children are getting at school. The learners would tellg their parents that they eat at school and it is helping them, and apparently the parents were also excited. Participant 8 stated: *"In terms of food quantities, yes, they are satisfied, and in our situation, those that are* ***not*** *full, are given a chance for an extra portion. Others get satisfaction from eating rice, which they never get to eat at home, where they only eat porridge due to being needy. Moreover, I met some parents in town of the learners who participate in SMs, and they appreciated that the school was providing meals to their children. They told me that the children were reporting that they eat well at school."*

However, Participant 8 was quick to add that, other aspects relating to satisfaction were found wanting, participants when interviewed, reported that, some learners were not satisfied with the type of food served in SMs, some ate on certain days and some did not eat at all. Other learners were reported by participants as unhappy due to the scramble for food and caused them to avoid the meals because the dining experience was uncomfortable. Participant 8 revealed: *"However, in terms of the dining experience, like queueing for food, some are not happy. There tends to be a scramble in the lines, which is disturbing when the learner is expected to have an enjoyable meal after dishing. This experience has caused some learners to stop taking the SMs. They feel embarrassed as if fighting for the food. Some feel humiliated as they are pushed by those who are rushing to get the food."*

The submission by Participant 8 suggests that there are factors surrounding participation and non-participation of high school learners in SMs, which clearly means there are a number of learners who do not participate in SMs, even if they wanted to, depending on certain factors. With regard to level of satisfaction, results indicate that the participants reported that high school learners are satisfied with food portions or size of meals they receive at school. However, the method of serving and dishing food causes the learners to be dissatisfied. This involves the way the food service, in which case, they must stand in lines as the food during dishing up to each one of them. Additionally, monotony of menu and probably the whole dining experience. Basically, satisfaction in SMs is based on several factors, not just how much food the learners are getting per serving, which then results in a situation in which learners eat on some days and do not eat on some or learners not eating at all.

4.1.4 Learners' level of participation in school feeding

Additionally, provided with the survey questionnaires, the learners also ranked their level of participation in terms of frequency with which they eat per week. Results presented in Figure 1 indicates that most (46.2%) of the learners eat SF every day. This statistical indication means that about half the number of respondents eat daily from school meals, and it is a confirmation that among the high school learners, some participate, and others do not participate in SMs. The results are, therefore, consistent with the findings from the interviews. The results further indicate that high school learners who participate in school meals four times a week form (17.6%) of the respondents while (8.6%) of the learners participate in school meals three times a week. Furthermore, a 14.3% of high school learners take school meals twice a week and 13.3%) high school learners never participate in SF.

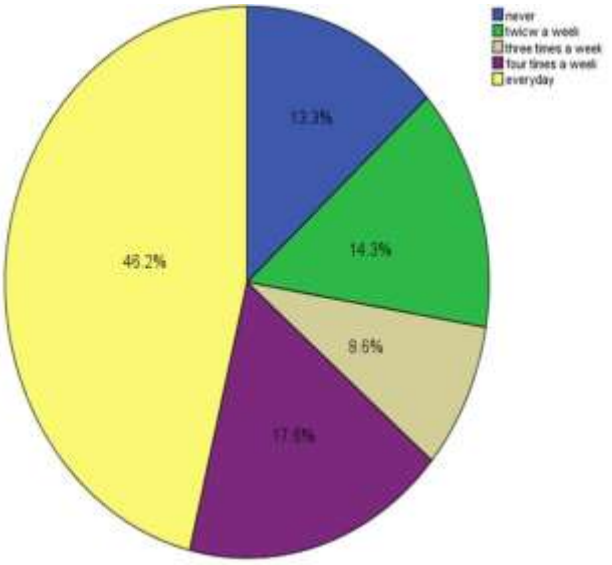

Figure 1. Level of participation

Based on the quantitative and qualitative data above, the findings from interview responses confirmed the results from the survey and revealed that level of participation in SMs by high school learners is slightly below 50%, which is about half the number of enrolled learners. Moreover, this is an indication that, not all of the learners take part in SMs. Furthermore, findings indicated that level of participation in SMs is judged from the number of learners who show up for meals, which is moderate to high, meaning that, not all learners are taking SMs.

Furthermore, the findings also indicated that among the number of learners who eat SMs, are the OVC, whose socio-economic status is low, who also have little or nothing to eat at home and are compelled to eat what the meals offered at school. Among the learners who eat SMs, there are still those learners who do not participate in SMs every day, and those who do not eat SMs at all. Additionally, the findings revealed that the variation in the level of participation in SMs reduces due to dissatisfaction in lack of variety in menu items and the long lines during dishing up, which involves scrambling and pushing for the food.

Therefore, the findings were also confirmatory that, adolescents eat SMs frequently, regardless of sex, however, the percentage of adolescents consuming lunch reduces significantly in high school in proportion to age, something usually observed among girls. (Ostachowska-Gasior, 2016). Additionally, Zellner, (2016), reported that older learners participated in SMs less frequently than younger learners did and often have access to more lunch options, as open campus lunch periods. The findings confirmed that high school learners have issues with eating SMs, hence some eat and some do not eat. Furthermore, Moore et al., (2009), with focus on the breakfast meal, reported that, as learners move from primary schools to secondary and high schools, they participate less in SMs. Moore associated this difference to independence of learners getting older and increased stigma associated with SMs.

These findings are significant for future prospects in planning and implementation for SF in high schools by the government of Eswatini, Ministry of Education and Training, and school heads to implement relevant strategies that will encourage the learners' participation in SMs and positively impact on effectiveness of SF in high schools.

4.2 Possible Improvement Strategies to Enhance Learner Participation in SMs

The high school learners were also asked to rate their views on possible improvement strategies that could enhance effectiveness of SF and improve learner participation in SMs. The results in Table 1 generally show that learners agreed that there are possible improvement strategies that can enhance effectiveness of SF and improve learner participation ($x = 4.50$). The results, confirm that high school learners agreed with statements on possible improvement strategies, that is; extra funding to help run school vegetable gardening ($x = 5.17$); learners to be key players in vegetable production ($x = 4.75$); regular nutrition education for learners ($x = 4.87$); learner involvement in menu development ($x = 5.07$); fruits to be served on some days in the week (5.40); community farmers' support for SF ($x = 4.73$); theme days, where special menu is served ($x = 5.03$); Consumer Science and Agriculture teachers to be focal teachers for nutritional advice ($x = 5.15$); food to be served in separate containers for each level to eliminate stigma (4.50);and serving of food in separate containers for each level to eliminate stigma ($x = 4.50$).

The results further indicate that high school learners slightly agreed on statements on possible strategies for improvement, that is, two year evaluation for SF to allow modifications ($x = 4.40$).

Table 1: Possible improvement strategies to enhance learner participation in SMs (n = 210)

Possible Improvement Strategies	$\bar{X}$	SD	DE
1. I suggest extra funding for school feeding to run school vegetable gardening	5.17	1.27	A
2. I suggest learners to be key players in vegetable production	4.75	1.43	A
3. I suggest regular nutrition education for learners	4.87	1.14	A
4. I suggest that learners be involved in menu development	5.07	1.14	A
5. I suggest that fruits be served on some days in the week	5.40	0.93	A
6. I suggest community e. g. farmers to support school feeding	4.73	1.32	A
7. I suggest a two-year evaluation for school feeding to make modifications	4.40	1.30	SLA
8. I suggest theme day (s), where special menu may be served	5.03	1.16	A
9. Consumer science and Agriculture teachers should be focal teachers for good advice on nutrition aspect	5.15	1.06	A
10. Food should be dished in separate containers for each level to eliminate stigma	4.50	1.50	A
Overall	4.50	1.23	A

5.5 – 6.4	Strongly Agree	(SA)
4.5 – 5.4	Agree	(A)
3.5 – 4.4	Slightly Agree	(SLA)
2.5 – 3.4	Slightly Disagree	(SLD)
1.5 – 2.4	Disagree	(D)
0.5 – 1.4	Strongly Disagree	(SD

Variety in menu items: This strategy accounted for ($\bar{x}$=5.40) and a (SD=0.93) value, of the high school learners involved in the study. Learners expect variety in SMs, where fruits may be served on certain days. This supports the assertion by Martens et al., (2005), who reported from a study that indicated that high school learners have a more positive attitude towards food when change is implemented. The study further indicated that, more positive self-efficacy expectations were associated with a higher intention to increase fruit intake. Furthermore, emphasis on variety in the menu involves use of different colours, components, texture, shape and arrangements of foods which works together pleasantly and appropriately in order to form pleasing combination on plate (Zampollo, Kniffin, Wansink, & Shimizu, 2011).

Additionally, the issue of variety involves the presentation of food and the eating environment. According to the findings, learners need a dining place and food options for betterment of meals. They need to eat in a relaxed manner and special dining areas instead of lines, as opposed to eating around the same area where food was prepared and cooked. This supports the assertion by Namkung et al (2007) who stated that food presentation is a factor that constitutes food quality and may influence the appetite of the people who will eat it and their perception of food quality. Shahrudin et al. (2011), added that, the way food is served is related to its method of preparation and presentation to its consumers. This is part of the practical idea in that effectively presenting attractive and well-garnished meals can enhance the consumer perception of its quality and the participation rate in those meals by those who should eat it.

Involvement of learners in menu development: This strategy accounted for ($\bar{x}$=5.07) which indicated that learners wish to be involved in menu development. During development of the menu items, it is important to consider learner involvement and their interests as the alternative food items are provided. Obtaining input from learners about food items to be served in the meals, is imperative if meals are to be appealing to learners. Consider the school context too and make meals appealing. This supports the assertion by Namkung et al. (2007), that involving the learners in development of the menu, may enhance food presentation and contribute to food quality which would influence their appetite and their perception of food quality.

Nutrition education for learners: This accounted for ($\bar{x}$=4.87) on strategies for enhancing SF. Nutrition education an instrument that is not quite familiar in mainstream curricula (Weaver-Hightower, 2011). Evidence has also been established that practical cooking and gardening lessons help to develop children's scientific and environmental understanding. Additionally, learning about food and nutrition in the school meal setting, can help learners to gain both social and practical food skills (Harper and Wells, 2007). In that context, nutrition education is a significant tool for sustainability in the context of agricultural, social, and political systems (Stone, 2007). In the context of 'the power of doing', learners are involved in the process of integrating growing, preparation, and consumption of food within a culturally relevant setting. More lessons on food preparation and gardening in the mainstream curriculum are vital for learners' appreciation for food, more appreciation for self-produced food; and aroused interest to try uncommon healthier food choices, which then serves as the beginning of a journey towards nutritious and sustainable food behaviors. Nutrition education further permits appreciation of the food by learners which they have produced by themselves (Dohle et al., 2014).

Healthy, palatable and appealing meals: Meals provided at school should be healthy, that is, balanced and appealing. Healthy meals include food from the three food groups, for example, for instance, provide of more fruits, whole grains, low-fat milk, less fat and salt, and healthier snacks and beverages. Additionally, arrangements of foods must work together pleasantly and appropriately in order to form pleasing combination on plate (Zampollo, Kniffin, Wansink, & Shimizu, 2011). It is essential that provision of healthy, palatable food and sustainable food behaviours, such as in

school garden projects, focusing on sustained intake of healthier foods inside and outside of school, is ensured (Suarez-Balcazar et al., 2014; Roccaldo et al., 2014).

Local Community involvement: This strategy accounted for **(**$\bar{x}$=4.73**)** Local community farmers could play a significant role as part of SF structure e.g. local farmers being roped in to support SF and making it cost-effective, where food items are procured cheap and at the same time farmers benefitting from sales to schools. These findings are consistent with those of Cole (2007) who argued that community participation is considered necessary to get local community support for planning and development. The findings also concur with the Young (2005) who observed that with local involvement, communities become a valuable resource for schools and contribute significantly to the sustainability of health promotion interventions as well as supply of locally grown food from local farmers.

V. CONCLUSION AND RECOMMENDATIONS

Much as there percentage of learner participants in SF, there is still major strategies to be put in place to encourage learners to participate in SMs to avoid dowplaying the Eswatini government's initiative in addressing the Millenium Development Goal 1, which is eradication of hunger among learners attending school at all levels. Strategies should be put in place to improve on SF implementation in relation to food range procurement, food quality, and food service in order to make it effective and sustainable. It is believed that with administering these strategies there would be increased meal participation rate among high school learners.

These include increasing range of food items served in SMs to encourage more learners to participate in SF. Variety is accomplished through use of different colours, components, texture, shape and arrangements of foods which works together pleasantly and appropriately in order to form pleasing combination on plate. Further, extra funding from government is needed as SF is a costly intervention, which is why, in developing countries WFP has always been always the initial contributor to kick-start SF programmes. Another strategy entails involvement of learners in menu development so that they value the food and have a say on what to be cooked and how. Lastly the study concludes that nutrition education an instrument that is key to effectiveness of SF. The cooking and gardening skills would also help to develop children's scientific and environmental understanding. Additionally, learning about food and nutrition in the school meal setting, improves social and practical food skills. In that context, nutrition education is a significant tool for sustainability in the context of agricultural, social, and political systems.

VI. RECOMMENDATIONS

It is essential that all stakeholders in schools become vigilant in supporting SF. Hence, community involvement should be considered where local farmers sell their products to the school, and local authorities contribute ideas for successful SF. Home Grown School Feeding is another strategy that can be effectively used by schools running SF, for spreading variety of food included in meals and making it cost-effective. Schools should therefore partner with local farmers. SF overseers, such as administrators should be equipped with skills to support SF. SF facilitators, which is the cooks and focal teachers should have regular workshops to get training.

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