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# The role of learners' and parental socio-economic conditions in teaching and learning of science subjects at Mandlethu FET School:

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## Abstract

A survey was conducted at Mandlethu FET School in Mpumalanga, South Africa, with the aim of assessing the role of learners' and parental socio-economic conditions in teaching and learning of science subjects at Mandlethu FET School. A total study population of 126 interviewees, made up of male and female science learners (n=63) and their parents (n=63), were randomly sampled, whereby selected interviewees were given structured questionnaires to fill in, with the assistance of the school management. This amounted to 21 science learners and 21 parents each from learner Grades 10, 11 and 12, respectively. Data obtained was analyzed through descriptive statistics using sample means, frequencies and percentages. The results indicate that 66.7% of the parents were unemployed, while those who were employed were either casual workers, domestic workers or owned grocery shops and, as such, had limited sources of income. This implied that the majority of the parents were not economically empowered and, as such, were unable to provide basic school necessities such as stationery and books for their children except moral support by encouraging them to study. Thus, one possible outcome of this low socio-economic status is that children are likely to spend time helping with household activities after school instead of concentrating on their studies.

This practice left the learners poorer in their pursuit of basic science education and had an effect on South Africa's ability to attain the Millennium Development Goals of improving science education.

**Keywords:** Vlaglaagte 1 location, KwaMhlanga, Mpumalanga province, South Africa, basic education.

## Introduction

Teaching and learning of mathematics, science and technology in South Africa was affected by under-development of human potential, particularly among the black schools, during apartheid era (Mji & Makgato, 2006). Mandlethu FET School – located in Vlaglaagte 1 location in the former KwaNdebele homeland in Mpumalanga, South Africa – is one such school. Although science subjects are offered at the school, the school does not have facilities such as equipped laboratories or visual aids such as models, or even a school garden for practical agriculture training. However, in recent years, the focus of the national Department of Basic Education has been directed towards discovering ways to increase school learners' performance in science subjects to remedy the problem. Progress has been made in several areas including special education, test preparation, and assessment strategies. However, research has indicated that one of the most effective ways of increasing learner's motivation is not only through interventions in the schools, but also from parental support or the support received at home. Parental participation in their children's school activities has been shown to be one of the determinants for success in education (Mmotlane et al, 2009). Thus, parental involvement continues to be the most influential factor in learners'

achievements and motivation (Bafumo, 2003). In essence, parenting has its influence indirectly by shaping the child's self-concept as a learner and through the setting of high aspirations. In support of this finding, Singh et al (2004) found that learners, whose parents were closely involved in their children's school lives and who monitored their progress, often did well in their studies. These findings have remained fairly consistent, despite the fact that schools now operate differently from those of a decade or two ago (Drake, 2000). However, Mmotlane et al (2009) reported that there has been low parental involvement in South African black schools in recent years. Keeping this in mind, Unisa's Department of Agriculture and Animal Health adjusted its community engagement training objectives, making them more relevant towards assessing the impact of factors that contribute to learners' success through analyzing the role of learners' and parental socio-economic conditions in teaching and learning of science subjects at Mandlethu FET School. The objective of this study was, therefore, to evaluate the factors that contribute to learners' success by assessing the role of learners' and parents' socio-economic conditions in teaching and learning at Mandlethu FET School. Thus, it is envisaged that lessons learned from this exercise will enable stakeholders to play a more meaningful role in the success of learners at Mandlethu FET School and elsewhere.

## Material and Methods

*Study site*

This study was conducted in Mandlethu FET School in March 2011. Mandlethu FET School is located in Vlaglaagte 1 in the former KwaNdebele homeland, in the

Mpumalanga province of South Africa. The area is rural and characterized by small-scale livestock and crop production. The people, who participated in the research, mostly live in townships (organized settlements). The school consisted of 13 classrooms, 13 educators and 296 learners in Grades 10 to 12 in the year 2010, of which, 100 learners were enrolled in science subjects; namely, Agriculture; Life Sciences; Physical Science; Geography; Mathematics and Mathematics Literacy. Overall. There were 5 educators teaching science subjects.

*Procedures*

This study was confined to three groups of male and female science school learners representing Grades 10, 11 and 12, and their parents, respectively (Table 1). Hence, a total study population of **126** interviewees, made up of male and female **science** learners **(n=63)** and their parents **(n=63),** were randomly sampled, whereby selected interviewees were given structured questionnaires to fill in with the assistance of the school management. This amounted to **21** science learners and **21** parents each from Grades 10, 11 and 12, respectively. This represented about 50% each of the total number of learners enrolled in science in the school and their parents. Data collection was done through administered structured questionnaires, filled in by the randomly selected science learners in Grades 10, 11 and 12, respectively, and their parents. Primary data and information obtained from the parents included the following: parents' occupation; attendance of school meetings; frequency of participation in school meetings; parental support and encouragement of their children's education; type of support towards children's education; parental assistance in the purchase of their

children's books and stationery; children's access to books and other stationery, and children's activities after school.

*Data analysis*

Completed questionnaires were retrieved and analyzed through descriptive statistics using simple means, frequencies and percentages to describe: the parents' occupation; attendance of school meetings; frequency of participation in school meetings; parental support and encouragement of children's education; type of support towards children's education; parental assistance in purchasing of their children's books and stationery; children's access to books and stationery, and children's activities after school. The results were presented in tabular format.

**Results**

A summary of the average age of the interviewed learners is shown in Table 2. Most of the learners (22.2%) interviewed had an average age of 17 years. Only 1.6% had an average of 21 years.

Data on the occupation of the parents interviewed in the study is shown in Table 3. The result indicated that the majority of the parents in the study were unemployed (66.7%). However, 20.6% of the parents were casual workers, while 9.5% were domestic workers. The remaining 3.2% of the interviewed parents owned local grocery shops.

Data regarding their participation in and attendance of school meetings is summarized in Table 4. In showing support for school meetings, 80.6% of the parents indicated that they attended school meetings and only 19.4% indicated that they did not attend school meetings. Of the parents that attended school meetings, 43.6% indicated that they

attended meetings more than twice in one term, 16.4% indicated that they attended twice per term and 27.3% indicated that they attended once per term. However, 9.1% of parents who were interviewed indicated that they have never attended any school meetings.

Parental support of their children's education is indicated in Table 5. Out of a total of 63 respondent parents, 62 (98.4%) indicated that they supported their children's education. However, one (1.6%) of the parents indicated that he/she did not support his/her children's education.

The kind of support that parents provided to children was moral support, by encouraging their children to learn. This kind of support was indicated by 91.8% of the parents. Only 8.2% of the parents indicated that they supported their children by providing school necessities (Table 5). This was not unexpected, since 66.7% of the parents indicated that they were unemployed. In fact, most of the parents (52.6%) indicated that their children received books from the provincial government and only 42.1% of the parents indicated that they bought books for their children with the support of grandparents and relatives, as shown in Table 6. However, 57.14% of parents indicated that their children had enough books, while 42.86% of parents indicated that their children did not have enough books, as shown in Table 5.

The result of the present study showed that 45.2% of the parents indicated that the type of activities that their children engaged in after school were mainly reading at school and helping with household chores (38.7%). However, 8.1% of the parents were not sure about their children's activities after school, as shown in Table 5.

## Discussion

The study first focused on the average age of the learners that were interviewed. This was done in order to determine whether the learners were at the appropriate school age for Grades 10, 11 and 12, and also to determine their level of readiness to go to tertiary institutions. Most of the learners (22.4%) interviewed had an average age of 17 years. Only 1.7 % had an average of 21 years. This statistic indicates that the learners at Mandlethu FET School who were interviewed were at an acceptable school age (17 years old) for Grades 10 to 12. This meant that they could still consider furthering their studies post matric, if given the opportunity to do so.

The results of the present study indicate that majority of the parents were unemployed (66.7%). In most cases, the employed parents were either casual workers, domestic workers or owned local grocery shops. These are known to be low-paying jobs in South Africa. Thus, this high unemployment rate has a negative impact on the ability of the parents to support their children's education, as evidenced by the fact that only 8.2% of the parents indicated that they were able to provide school necessities to their children. This is in agreement with the findings of Desforges and Abouchaar (2003), which indicated that poor parents, of a low socio-economic status, found it difficult to support their children's educational development since parental socio-economic status had more of an influence on their participation in the education of the children than other variables such as gender, age and marital status (Astone & McLanahan, 1991; Grolnick et al, 1997). One possible outcome of this low socio-economic status is that, in an attempt to empower the family, the children had to spend time helping with household activities after school, as indicated by 38.7% of the interviewed parents. Singh et al

(2004) reported that involving children in such activities after school may be tiring and children will think of sleeping afterwards instead of studying. This practice leaves the learners poorer in their pursuit for basic education and, as such, it could lead to poor performance at school.

Although there was a clear indication that most of the respondents could not support their children's education, at least 52.6% of the parents indicated that their children received books from the government. This shows that the opportunity for increased access to school necessities does exist. However, it seems that there are certain underlying factors inhibiting the efficient functioning of this provincial government intervention program, as 42.9% of the parents indicated that their children do not have access to books and stationery. This finding lends support to the importance of conducting research in order to identify ways of improving access to books and stationery to meet the learners' needs, since the inadequacy of this intervention program is a limitation to science learners in this area. This is especially relevant in this instance, considering the fact that science subjects may sometimes require referral stationery and books, which will help learners to perform certain school activities.

On the other hand, the findings of the present study showed that there were certain desirable traits that were commendable. It was found that 91.8% of the interviewed parents gave moral support and general encouragement to their children to learn. This result was not unexpected as the majority of the parents (80.6%) were able to attend school meetings. This suggests that parents do communicate the importance of education to their children, which is likely to motivate them, as reported by Gonzalez-Dehass et al (2005). This finding is also supported by the fact that 60% of the parents

attended meetings more than once per year. Thus, one possible reason for this high parental participation in school meetings could be attributed to an overwhelming support for their children's education, as indicated by 98.4% of the interviewed parents. As suggested by Trusty and Lampe (1997), parental involvement offers a sense of security and comfort to learners, especially during the adolescent stage when individuals strive for growth and self-development. Hence, by being involved in school activities, parents may improve their professionalism, time management and organizational skills, and gain a better understanding of their children and themselves (Martin, 2003). Contrary to the present finding, Mmotlane et al (2009) found that parental participation in school activities in South African black schools is low. Similarly, Martin (2003) reported that some parents did not participate in their children's school activities because they felt that it was not their job or they had no interest because of their attitudes or beliefs.

However, it must be emphasized that general encouragement, in most cases, will not provide learners with a clear vision of where they would like to see themselves when they finish their studies. This, more importantly, erodes the opportunity for proper career planning and guidance with regard to the future career plans of the learners and it could have a negative impact on the learners' success at tertiary institutions. The fact that apparently only 5.3 % of the learners indicated that they received support in the form of career guidance is worrisome. A lack of career guidance has a tendency of increasing the learners' state of under-preparedness for tertiary education and might have its own toll, which includes poor throughput rates and high dropout rates. This observation is contrary to the content of the FET White Paper 4 of 1998, which made a clear commitment towards this, as it mentions that career guidance will be a central element

of the new FET system. Apparently, it has been observed that if the learners are offered adequate guidance and counseling support, they become motivated to undertake an active and meaningful approach to their studies. Hence, as a corrective measure, it is suggested that provision is made in the school's funding arrangement for the improvement and furtherance of academic guidance and counseling support services as this will help to produce a holistically equipped student.

## Conclusion

In conclusion, this study has shown that most of the parents of learners at Mandlethu FET School are unemployed and that those who are employed are either casual workers, domestics workers or own grocery shops. This implies that a majority of the parents is unable to provide basic school necessities, such as stationery and books to their children, and is only able to offer moral support by encouraging them to study. However, it must be emphasized that general encouragement, in most cases, does not provide learners with a clear vision of where they would like to see themselves when they finish their studies. More importantly, this lack of a clear vision of the future erodes the opportunity for proper career planning and guidance and has a negative impact on the learners as it has a tendency of increasing the learners' state of under-preparedness for tertiary education which, in turn, might have its own toll, including poor throughput rates and high dropout rates. Additionally, one possible outcome of parental low socio-economic status is that children spend time helping with household activities after school, instead of concentrating on their studies. This practice leaves learners poorer in their pursuit for basic education and has an effect on South Africa's ability to attain the Millennium Development Goals of improving science education.

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## References


Astone, N.M., McLanahan, S.S. (1991). Family structure, parental practices and high school completion. *American Sociological Review*, 56:309-320.

Bafumo, M.E. (2003). Partnering with parents. *Teaching Prek-8*, 34(1): 12-14.

Desforges, C., Abouchaar, A. (2003). The impact of parental involvement, parental support and family education on pupil achievement and adjustment: a literature review. *Research Report No 433.* Nottingham: Department for Education and Skills.

Drake, D.D. (2000). Parents and families as partners in the education process: Collaboration for the success of students in public schools. *ERS Spectrum*, 34-35.

Gonzalez-Dehass, A.R., Willems, P.P., & Doan-Holbein, M.F.D. (2005). Examining the relationship between parental involvement and student motivation. *Educational Psychology Review,* 17(2), 99-123.

Grolnick, W.S., Benjet, C., Kurowski, C.O., & Apostoleris, N.H. (1997). Predictors of parental involvement in children's schooling. *Journal of Educational Psychology*, 89, 538-548.

Martin, T. (2003). Parental involvement in education. MSc research paper, University of Wisconsin-Stout

Mji, A., & Makgato, M. (2006). Factors associated with high school learners' poor performance: a spotlight on mathematics and physical science. *South African Journal of Education,* 26(2), 253–266.

Mmotlane, R., Winnaar, L., & Wa Kivilu, M. (2009). Personal characteristics that predict South Africans' participation in activities of their children's schools. *South African Journal of Education*, 29, 527-540.

Singh, P., Mbokodi, S.M., & Msila, V.T. (2004). Black parental involvement in education. *South African Journal of Education*, 24, 301-307.

Trusty, J., and Lampe, R. E. (1997). Relationship of high-school seniors' perceptions of parental involvement and control to seniors' locus of control. *Journal Counseling Development,* 75(5), 375–384.


**Tables:**

**Table 1: Initial distribution of s*ample population for interviews***

| Variable | No. of participants | Proportion (%) |
|---|---|---|
| ***Sample population interviewed*** | | |
| *Learners (Grades 10, 11 and 12)* | 63 | 50 |
| *Parents* | 63 | 50 |
| **Total** | **126** | **100.00** |
| ***Gender of participants interviewed (learners)*** | | |
| *Male* | 22 | 38.6 |
| *Female* | 35 | 61.4 |
| **Total** | **57** | **100.00** |
| ***Gender of participants interviewed (parents)*** | | |
| *Male* | 24 | 38.1 |
| *Female* | 39 | 61.9 |
| **Total** | **63** | **100.00** |

**Table 2: Average age of interviewed learners**

| Age | No. of participants | Proportion (%) |
|---|---|---|
| 15 | 03 | 4.8 |
| 16 | 12 | 19.0 |
| 17 | 14 | 22.2 |
| 18 | 10 | 15.9 |
| 19 | 11 | 17.2 |
| 20 | 12 | 19.0 |
| 21 | 01 | 1.6 |
| **Total** | **63** | **100.00** |

**Table 3: Occupation of parents**

| Variable | No. of participants | Proportion (%) |
|---|---|---|
| Unemployed | 42 | 66.7 |
| Casual workers | 13 | 20.6 |
| Domestic workers | 6 | 9.5 |
| Grocery shop owner | 2 | 3.2 |

| | | |
|---|---|---|
| **Total** | **63** | **100.00** |

**Table 4: Attendance and participation of parents in school meetings**

| Variable | No. of participants | Proportion (%) |
|---|---|---|
| ***Attendance of school meetings*** | | |
| Attend | 50 | 80.6 |
| Do not attend | 12 | 19.4 |
| **Total** | **62** | **100.00** |
| ***Participation in school meetings*** | | |
| Once | 15 | 27.5 |
| Twice | 9 | 16.4 |
| More times | 24 | 43.6 |
| Don't know | 2 | 3.6 |
| None | 5 | 9.1 |
| **Total** | **55** | **100.00** |

**Table 5: Educators and parental support in learners' education**

| Variable | No. of participants | Proportion (%) |
|---|---|---|
| ***Support and encouragement*** | | |
| Support children's education | 62 | 98.4 |
| Do not support children's education | 1 | 1.6 |
| **Total** | **63** | **100.00** |
| ***Type of support*** | | |
| Provide school necessities | 5 | 8.2 |
| Moral encouragement | 56 | 91.8 |
| **Total** | **61** | **100.00** |
| ***Parent's assistance in the purchase of children books and stationery*** | | |
| Relatives | 16 | 42.1 |
| Government | 20 | 52.6 |
| Guidance and counseling by educators | 2 | 5.3 |
| **Total** | **38** | **100.00** |
| ***Children's access to books and stationery*** | | |
| Access to books and stationery | 36 | 57.1 |

| | | |
|---|---|---|
| Do not have access to stationery | 27 | 42.9 |
| **Total** | **63** | **100.00** |

***Children's activities after school***

| | | |
|---|---|---|
| Play games | 2 | 3.2 |
| Go to library | 2 | 3.2 |
| See friends | 1 | 1.6 |
| Help in the household | 24 | 38.7 |
| Read at home | 28 | 45.2 |
| Don't know | 5 | 8.1 |
| **Total** | **62** | **100.00** |