

**INTERNATIONAL JOURNAL OF
INNOVATIVE RESEARCH AND KNOWLEDGE**

ISSN-2213-1356

www.ijirk.com

**COUNSELLING NEEDS RELATED TO ATTITUDE
AFFECTING STUDENTS' PERFORMANCE IN PHYSICS BY
GENDER IN SECONDARY SCHOOLS IN MBEERE
NORTH SUB-COUNTY, KENYA****Joel Murimi Kinyua & Veronica Karimi Nyaga**
Chuka University, P.O. Box 109-60400, Chuka, Kenya**Abstract**

Attitudes offer great possibilities for meaningful and successful achievement in sciences especially physics. Students have portrayed dismal performances in science subjects due to the psychological issues affecting them. This study sought to establish the guidance and counselling needs related to attitude affecting students' performance in physics in secondary schools in Mbeere North Sub County. The study adopted descriptive survey research design where the study population was 8,000 students from the 43 public secondary schools in Mbeere North Sub-County. Simple random sampling was used to obtain a sample of 290 students. A Questionnaire was used to obtain the required data. The raw data obtained was coded and entered into the computer for analysis using SPSS version 23.0. The data was analysed using both descriptive and inferential statistics. The hypothesis was tested at $\alpha=0.05$ level of significance. The study established that students experienced psychological issues ranging from stress, anxiety, low interest and low self-esteem. There was also no statistically significant difference in attitudinal needs affecting boys and girls towards physics performance.

Key Terms: *Physics Performance, Attitudinal Needs, Gender, Guidance and Counselling*

1. Introduction

The attitude of students towards sciences, their grades and their career expectations, have been identified as possible contributing factor to achievement in science. It has been noted that achievement and students' motivation are influenced by both positive and negative attitudes. Oh and Yager (2004) found that students with positive attitudes toward science possessed positive attitudes towards their science teacher, science curriculum and science-classroom climate. Better academic performance in physics subject is facilitated since students have a better grasp of ideas due to increased interests and motivation. Students with negative attitudes towards science do not like physics subject and the physics teacher and thus leads to poor performance in physics among students. Mangaoang-Boado (2013) adds that factors that affect students' attitude in sciences include methods of studying, influence of parents, socioeconomic levels of families, previous learning experiences and gender influence. Research has demonstrated that, "the attitudes toward science change with exposure to science, but that the direction of change may be related to the quality of that exposure, the learning environment, and teaching method" (Craker, 2006). Research also shows that in a study between students' attitudes and examination performance in sciences, there was a significant relationship between attitude and performance (Sarwar, Bashir & Alam, 2010). Therefore, in order to increase the level of attitude and success in Physics learning, new teaching and learning methods and technological innovations need to be implemented into Physics education (Adeniji, 2008).

Guidance and Counselling department can help learners develop positive attitudes toward physics leading to an improvement in the performance of physics among secondary school students. Schmidt (2003) concurs that students' counselling improves school attendance, school behaviour, increases student achievement and increases students' levels of self-esteem and attitudes toward school. Students' success in achieving their goals will encourage them to develop positive attitudes towards physics and other problem-solving activities. Currently, there are major science education reforms efforts emphasized on the improvement of students' attitudes. Some of the reforms include integrating guidance and counselling in the teaching and learning of physics as well as physics teachers employing student centred methods of teaching physics (Mendezabal, 2013). Also, to achieve academic success, Mutie and Ndambuki (2002) emphasize use of academic guidance and counselling to motivate students to develop right attitudes.

Despite efforts by schools to promote positive attitudes among the students towards sciences especially in physics, fewer results have been achieved. There is need to look at the social and psychological factors affecting students' attitudes in their quests for science knowledge. Knowledge about guidance and counselling needs in physics will help Physics teachers and school counsellor design and implement appropriate physics guidance programmes. Therefore, the researcher sought to establish the guidance and counselling needs related to attitudes affecting boys and girls students' performance in Physics in secondary schools in Mbeere North Sub County, Kenya.

2. Objectives of the Study

The objectives of the study were:

- i. To determine the attitudinal needs that affects students' performance in Physics.
- ii. To determine whether there was a statistically significant difference between boys and girls students' attitudinal needs towards Physics performance.

3. Methodology

The study used descriptive survey research design where the study population was 8,000 students from the 43 public secondary schools in Mbeere North Sub-County. Simple random sampling was used to obtain a sample of 290 form three and form four students. The sample consisted of boys and girls who were sampled proportionately in 25 secondary schools as per the population. A Questionnaire containing 25 closed and open

ended test items were used to obtain the required data. Frequencies, percentages and t-test statistics were used to analyse the data by use of SPSS version 23.0.

4. Results and Discussion

The following results were obtained:

4.1 Counselling Needs Related to Attitude Affecting Students' Performance in Physics

The study sought information on attitudinal needs affecting students' performance in Physics as shown in Table 1.

Table 1: Students' Opinions on Attitudinal Needs Affecting Performance in Physics

Statement	SA (%)	A (%)	U (%)	D (%)	SD (%)
I need to reduce my anxiety in examinations through the help of G/C.	45.7	40.4	6.4	7.4	0.1
G/C can help me tackle my fear for physics.	50.0	36.2	6.4	3.2	4.2
I always get stressed when learning physics and G/C can help me to relax and feel better.	23.4	26.6	19.1	22.3	8.5
Physics is a hard subject to me and G/C can assist in motivating me to pursue it further.	16.0	21.3	17.0	25.5	20.2
I always apply physics principles to real life situations hence increasing my interest for physics.	51.1	26.5	16.0	4.3	2.1
I always find ways to raise my self-esteem towards physics through the help of G/C teacher.	23.4	29.8	19.1	18.1	9.6
Learning of physics is very interesting to me hence high performance.	30.9	23.4	22.3	18.1	5.3

Information in Table 1 indicates that 45.7%, 50.0%, 23.4% and 23.4% of the students strongly agreed that guidance and counselling services can help them reduce anxiety in examinations, tackle fears in physics, tackle stresses when learning physics and raising their self-esteem towards physics respectively. This means that secondary school students have counselling needs which have led to development of negative attitude towards physics. The students confirmed to getting stressed when learning physics, fearing physics, getting anxious during examination periods and having low esteem towards physics subject.

Besley (2002) points out that an effective guidance and counselling services works in a preventive way and equips learners with attitudes and skills which enable them to successfully tackle the challenges. Rowley, Stroh and Sink (2005) depicts that effective school guidance and counselling service help students acquire right skills and attitudes in schools. Hence, a positive attitude plays a significant role in learning physics since it determines the amount of time and effort dedicated to the subject and this is likely to be reflected in performance (Nderitu, 2007). Odhiambo (2014) confirms that poor academic performance is caused by anxiety among the students which in turn affects their concentration levels in the studies. The school guidance and counselling department have a role of helping students address their needs hence causing change of attitude towards physics which translates to improved performance. Ngetich (2014) points out that encouragement and change of mind towards physics can be done by counselling teachers and physics teachers in the open forums and guidance sessions in the schools.

However, majority of students comprising 20.2% and 25.5% of the students' participants strongly disagreed and disagreed respectively that physics is a hard subject yet the physics performance was still poor in most

schools. A clear indicator that physics is an easy subject but students do not seem to perform well either. Hence, the study needs to look more on the causes of negative attitude of students towards physics. Also, 54.3% of the students agreed that learning of physics is interesting and this leads to high performances in physics. Erdemir (2009) adds that knowledge and skills related to solving physics problems are essential in ensuring a positive attitude towards physics. Erdemir also noted that students with positive attitudes and beliefs about physics succeed at higher levels. Selecting appropriate, effective methods and putting them into practice helps students develop a more positive attitude towards physics. Kihwele (2014) agrees that there is a development of negative attitude toward science subjects from students who think that science is difficult and requires high understanding ability. He agrees that these attitudes are fabricated by the society and this has led to students putting less effort in science since they believe they will never perform better. Ndirangu (2007) concur that teacher counsellors have a major responsibility of helping students gain more interest in physics by enabling them develop positive academic self-concepts.

In addressing the issue of negative attitude by the students, 23.4% and 29.8% of the students strongly agreed and agreed respectively that they always find ways of raising their self-esteem towards learning of physics, and even after examinations in case of weak grades obtained. Proper and high self-esteem is vital for the development of positive attitudes towards physics hence high performances by students in secondary schools. Hisken (2011) agrees that there is a positive correlation between self-esteem of students and academic performance. Mutie and Ndambuki (2002) put emphasis on use of academic counselling to motivate students develop right attitudes towards academic success. Braddock (2001) adds that the purpose of guidance and counselling services for school students is to improve academic performance and fostering positive attitude towards learning. This is a clear indicator that counsellors support and promote students to enhance their academic performance in physics.

4.2 Comparison of Attitudinal Needs between Boys and Girls to Physics Performance

The study sought to determine whether there was any difference in attitudinal needs affecting boys and girls students' performance in Physics in secondary schools.

Table 2: Overall Mean Differences between Boys and Girls on Attitudinal Needs to Physics Performance

Gender of Respondents	N	Mean	Std. Deviation	Std. Error Mean
Boys	155	3.6949	.52453	.04213
Girls	135	3.7905	.51502	.04433

Table 3: t-test Results on Comparison of Attitudinal Needs affecting Boys and Girls Students' Physics Performance

Levene's Test for Equality of Variances						
		F	Sig.	t	df	Sig. (2-tailed)
Overall t	Equal variances assumed	.114	.736	-1.560	288	.120
	Equal variances not assumed			-1.562	283.880	.119

The results on Table 2 indicate that means of boys and girls was 3.6949 and 3.7905 respectively. The findings from Table 3 show that the calculated p value is greater than 0.05. Therefore, the null hypothesis was accepted. This is in line with Pell and Manganye (2007) who found out that there is no difference in means comparing counselling needs related to attitudes between boys and girls. This indicates that both boys and girls experience more or less the same counselling needs related to attitudes. Hence, teachers and guidance and counselling department should treat both genders with similar magnitudes when it comes to counselling needs related to attitudes toward physics performances in academics. Olasehinde and Olatoye, (2014) agrees that since there are no differences, teachers to use teaching and learning techniques that will sustain gender equality in students' learning outcomes in sciences.

5. Conclusion

The research established that majority of the students experienced issues ranging from fear of physics, anxiety during physics examinations, stresses, low self-esteem and low interest towards physics as a subject including theoretical and practical work. The study revealed that some of the factors contributing to difference in physics performance are lack of administrative motivation on the part of administration towards the students and physics subject, and also students are sometimes not aware of their abilities.

6. Recommendations

To address the negative attitude of students towards physics, the physics teacher and the teacher counsellor should organise forums and seminars to sensitize students and other teachers on improving attitudes especially in physics.

The teacher counsellor needs to train students on ways of alleviating stress, fear, low self-confidence and low self-esteem.

The school administration may seek to motivate students and teachers by providing incentives to those who perform well in physics.

References

- Adeniji, A. J. (2007). A study of junior secondary school students' performance in mathematical signs and symbols. *Azare Journal of Education*, 6 (1), 24 – 37.
- Besley, A. C. (2002). Into the 21st Century: The McCrone and McConnell Reports-Opening the Possibility for Introducing Full-Time School Counsellors into Scottish Schools. *In Scottish Educational Review*, 34 (1), p.61-75.
- Braddock, L. (2001) *Guidance Programme Pages*, Retrieved on 21/12/2015 from <http://www.feps.com>, Handbook.
- Coley, R. (2001). Differences in the Gender Gap: Comparisons Across racial/Ethnic Groups in Education and Work (Policy Information Report). *Educational Testing Service*. Princeton, NJ:
- Craker, D. E. (2006). Attitudes toward Science of Students Enrolled in Introductory Level Science Courses at UW-La Crosse, UW-L. *Journal of Undergraduate Research IX*, 1-6.

- Draghicescu, L. M., Petrescu, A. M., Gorghiu, L. M., & Gorghiu, G. (2013). Students' Pedagogical Counselling in the Science Learning Context. *Procedia-Social and Behavioral Sciences*, 92, 280–286.
- Erdemir, N. (2009). Determining Students' Attitude towards Physics through Problem-solving Strategy. In *Asia-pacific forum on science learning and teaching, Hong Kong Institute of Education* (Vol. 10, pp. 1–19). 10 Lo Ping Road, Tai Po, New Territories, Hong Kong.
- Hisken, L. J. (2011). *The Correlation between Self-esteem and Student Reading Ability, Reading Level, and Academic Achievement*. (Master thesis). Postgraduate School, University of Central Missouri.
- Kihwele, J. E. (2014). Students' Perception of Science Subjects and their Attitude in Tanzanian Secondary Schools. *World Journal of Educational Research*, 1(1), 1–8.
- Mangoang-Boado, N. (2013). Factors Influencing the Academic Performance in Physics of DMMMSU-MLUC Laboratory High School Fourth Year Students S.Y. 2011-2012. *International Scientific Research Journal*, 2, 34–44.
- Mendezabal, M. J. N. (2013). Study Habits and Attitudes: The road to Academic success. *Open Science Repository Education*, (open-access), e70081928.
- Mutie, E. K., & Ndambuki, P. (2002). *Guidance and Counselling for Schools and Colleges*: Nairobi, Oxford University Press.
- Nderitu, M. K. (2007). *Determinants of Enrolment and Performance in Physics in Selected Secondary Schools in Murang'a District*. Unpublished Med Thesis.
- Ngetich, J. (2014). *Factors influencing Girls' Low Enrolment and Poor Performance in Physics: The case of secondary schools in Nandi South District, Kenya*. Unpublished University of Kenyatta, M. Sc. Thesis.
- Ndirangu, P. (2007). *The Influence of Guidance and Counselling Programme on Academic Performance of Selected Public Secondary School Students. A Case of Bahati Division, Nakuru District*. Unpublished Egerton University M.ed. Thesis.
- Odhiambo, O. (2014). Influence of Guidance and Counselling on Academic Performance of Students in Selected Public Secondary Schools in Molo Sub County, Nakuru County, Kenya. *International Journal of Science and Research (IJSR)*, 2131.
- Oh, P. S., & Yager, R. E. (2004). Development of Constructivist Science Classrooms and Changes in Student Attitudes toward Science Learning. *Science Education International*, 15(2), 105-113.
- Olasehinde, K. J., & Olatoye, R. A. (2014). Comparison of Male and Female Senior Secondary School Students' Learning Outcomes in Science in Katsina State, Nigeria. *Mediterranean Journal of Social Sciences*, 5(2), 517.
- Rowley, W. J., Stroh, H. R., & Sink, C. A. (2005) Comprehensive Guidance and Counselling Programmes' Use of Guidance Curricula Materials: A Survey of National Trends. In *Professional School Counselling*, 8 (4), p.296-305.
- Sarwar, M., Bashir, M., & Alam, M. (2010). Study Attitude and Academic Achievement at Secondary Level in Pakistan. *Journal of College Teaching and Learning*, Vol. 7 (2).
- Schmidt, J. J. (2003). *Counseling in the Schools: Essential services and Comprehensive Programs* (4th ed.). Boston: Houghton Mifflin.