

Learning Environment, Achievement Motivation and Career Decision Making among Gifted Secondary School Students

American Journal of Education and Learning

Vol. 4, No. 1, 50-61, 2019
e-ISSN:2518-6647



Ogutu Peter Joel

Department of Educational Psychology, Masinde Muliro University of Science and Technology, Kenya
Email: joelogutu@yahoo.com

ABSTRACT

The study investigated the relationship between learning environment, achievement motivation and career decision making of gifted students. A total of 130 gifted students selected from six secondary schools participated in the study. Mean, standard deviation, Independent sample t-test, Spearman rank order correlation Co-efficient and multiple regression analysis were used to analyse the data. The result of the hypotheses of the study showed a significant relationship between the learning environment and achievement motivation ($r = .72, p < 0.01$). T-test for independent samples revealed that the differences between real and ideal classroom learning environment were statistically significant ($p < 0.05$) for the entire classroom learning environment indicators. The study also revealed a significant correlation between the classroom learning environment and career decision making among gifted secondary school students. The study established the role of the learning environment and achievement motivation on career decision making and made recommendations to stakeholders in education to assist students to realize their potential in achievement motivation and career decision making. The study concluded that gifted students' motivation was linked to the classroom learning environment. The support given in school and families were of major importance to their motivation to achieve. In addition, the students' motivation was anchored on the kind of classroom learning environment. Like ideal environment was found to be positively correlated to achievement motivation and career decision making. However, challenges in the classroom learning environment were counterproductive to achievement motivation and career decision making.

Keywords: *Achievement motivation, Career decision making, Learning environment, Gifted students, Talented.*

DOI: 10.20448/8044.1.50.61

Citation | Ogutu Peter Joel (2019). Learning Environment, Achievement Motivation and Career Decision Making among Gifted Secondary School Students. *American Journal of Education and Learning*, 4(1): 50-61.

Copyright: This work is licensed under a [Creative Commons Attribution 3.0 License](https://creativecommons.org/licenses/by/3.0/)

Funding: This study received no specific financial support.

Competing Interests: The author declares that there are no conflicts of interests regarding the publication of this paper.

History: Received: 10 January 2019/ Revised: 14 February 2019/ Accepted: 19 March 2019/ Published: 29 May 2019

Publisher: Online Science Publishing

1. INTRODUCTION

Gifted learners are identified as those with exceptional ability to accomplish at higher levels beyond their chronological age of fellow classmates (Sampson, 2013). Gifted learners require specialized educational programme and facilities superior from those usually provided in regular school programmes (Heward, 2006). The study of giftedness has been marked by development in definitions, programmes, facilities, and qualified interest (Friend, 2008). Globally, Sambu *et al.* (2014) assert that it was the work of Lewis Terman who laid the foundation in schools to identify and nurture students with gifted abilities.

Prior studies have shown that achievement motivation among learners who are gifted, contributes to individual's performance. They have the potential for performing better as compared to their counterparts in terms of their age, experience, or learning environment (Kahyaoglu, 2013; Wail *et al.*, 2013). According to Wang and Guthrie (2004) gifted learners are susceptible to social and emotional difficulties that bring them into skirmishes with their learning environment, especially when schools are not advantageous. Therefore, they become subjected to exceptional stressors and are susceptible to complications with emotional, intellectual and social modification which may end in risks of academic under-achievement. Past studies have illustrated that achievement motivation among gifted learners correlates with intrinsic and extrinsic types of motivation (Taboada *et al.*, 2009).

In African, most countries are yet to embrace educational programme for gifted and talented learners. This notwithstanding, the African Federation for the Gifted and Talented (AFGT) in consultation with the World Talent Federation, however, provide advocacy for gifted and talented persons in the continent (Sambu *et al.*, 2014).

Ineffectiveness in identification and recognition of gifted learners in Kenya has been a perennial issue linked to education curriculum that lacks provisions for the gifted learners. Thus, gifted individuals go unnoticed or unutilized (Republic of Kenya, 2003;2005). Kamunge Report (1988) noted that in every society, there are gifted and talented persons whose special gifts and talents begin to show at a fairly early age. The report maintained that such people should be identified early, given encouragement and adequate facilities to direct their training into fields that enhance overall development of the nation. Although the report proposed that such students should be identified and their gifts and talents developed in specific schools; such recommendations have not been implemented. Further to that, Koech Report (1999) found that the gifted and talented individuals in Kenya have not been given due recognition.

Learning environment depicts a psychological classroom and school culture. Adeyemo (2013) asserts that a supportive academic environment is considered by students as a leeway of their personal possessions and assists to reduce apprehension and undesirable feelings that affect psycho-social behaviour and achievement motivation. In addition, Bandura (1997) posits that good schooling foster psychological growth that contributes to the quality of life beyond the vocational realm. Gifted students are often perfectionists, and they place value on good learning environment is a psychological feeling of safety and acceptance to under tasks. Further research has identified a number of challenges in the learning environment that tend to undercut the abilities and potential of academically gifted students in schools. These includes; stereotypes in society, lack of role models, declining confidence in their abilities, differing expectations from teachers, and peer pressure to hide their abilities and intelligence (Regional Education Laboratory, 2007).

Recent research indicates that students with academic giftedness find it easier to acquire knowledge with much ease and put less effort in reading complex subjects with higher degree of understanding. On the other hand, less academically oriented students have to endure more hours trying to grasp relatively easy concepts in relation to the academically talented colleagues. Academically gifted students are motivated to learn the content of the course and take the responsibility of providing information out of the class as compared to non-gifted students (Kipkoech *et al.*,

2011; Kahyaoglu, 2013). Thus learning environment may have influence on how gifted students behave and get motivated towards learning.

Gifted learners in most secondary schools in Ugunja sub-county, Kenya are misunderstood and academically neglected. The stakeholders lack interest in them as individuals. Yet the gifted learners require enriched and specialized teaching and learning strategies different from other ordinary learners.

1.1. Problem Statement

Gifted learners are a valuable human resource stand to drive the development of any given society. Education reports in Kenya (Kamunge Report, 1988; Koech Report, 1999) revealed that in every society, there are about 15% of gifted and talented persons whose special abilities begin to show at an early age. Despite these potentials their talents are hardly nurtured at school. Prior studies indicate that gifted learners sit in class rooms bored and frustrated, they are left out and are not really benefiting from an equal educational opportunity as their peers. Additional reports assert that the gifted learners are rarely given encouragement and adequate facilities to enhance their potentials. Figures provided by Elewana Education Project (2016) indicate that over 4000 academically talented students in Kenya yearly go un-nurtured to enhance their potential. Indeed, the low levels in respond to gifted learners in Kenya suggest a continued crisis that demands attention. Majority of secondary schools experience inadequate teaching staff trained on how to guide gifted learners on future career choices. Therefore, the study examined learning environment and achievement motivation as antecedent to career choice of gifted students in Ugunja sub-county, Siaya County- Kenya.

1.2. The Objectives of the Study

This study focused on the learning environment, achievement motivation and career decision making among gifted secondary school students in Ugunja Sub County, Kenya. It further focused on the relationship between classroom learning environment and Achievement motivation on career decision making. The study sought to find out the differences in real and ideal classroom learning environment as perceived by gifted secondary school students. Finally, examined the correlation between the classroom learning environment and career decision making of gifted secondary school students

1.3. Theoretical Framework

The theoretical model of gifted learners is that translated into instructional practice in multiple intelligence theory by Gardner and Hatch (1991). Gardner argues that there are at least nine types of intelligences in which students may excel in anyone or several of these: linguistic, visual, logical, kinaesthetic, musical, intrapersonal, interpersonal, naturalistic and lastly existentialist systems, which involves the ability to study the realm picture of human existence, often in philosophical questions. Past study showed that students have relative strengths and more ability in some intelligence than in others. A learner should be provided with the opportunities for cultivation of any particular type of intelligence. The theory of multiple intelligences has the potential to fundamentally reshape learner. Therefore, the theory of multiple intelligence places a strong foundation on learning environment to support gifted and talented learners based on their varied characteristics and abilities. Secondly, learning environment should be organized in such a way that learners with special gifts are recognized and given space to exploit their talents with the guidance of the teacher (Gardner and Hatch, 1991).

2. LITERATURE REVIEW

2.1. Learning Environment

The learning environment refers to the psychological, social and pedagogical setting in which learning occurs and which affects students' motivational, cognitive, emotional, and behavioural outcomes (Lüdtke *et al.*, 2009). Learning environment is an essential variable in the development of gifted learners. Gifted students are those who demonstrate exceptional ability, competence or achievement in one or more domains (Steinmayr and Spinath, 2009).

Researchers have found substantial inconsistency in students' perceptions of the learning environment, and consequently argued that the students' interpretation of the classroom environment is predictive of students' motivation, cognition and behaviour (Greene *et al.*, 2004). Studies done by Corpus *et al.* (2009) found that parenting, school resources and cultural values influence learners' motivational achievement. Additional studies have revealed that positive teacher-student relationships and feelings of school belongingness both contribute achievement motivation. In contrast, the students who perceive teachers as strict achieve lower academically as compared to their counterpart peers (Gherasim *et al.*, 2011). Peer support motivates learners to collaborate, socially accountable and to follow classroom instructions (Gregory and Weinstein, 2004). Recent studies suggest that learning environment may have a strong inspiration on the goals that students adopt (Gherasim *et al.*, 2011). If the classroom activities emphasize relative ability, grades, and performance, then students are likely to embrace performance-focused goals.

2.2. Achievement Motivation

Achievement motivation is the central force behind one's determined actions in the academic, business and social life. Achievement motivation gives direction for striving towards success and away from failure (Elliot and Thrash, 2001). According to Butler (2000) an individual strives to gather lots of facts about oneself by measuring his abilities through the benchmarks in one's environment. In another development (Steinmayr and Spinath, 2009) posit that achievement motivation explains distinctive discrepancies in general school performance. However, Anderman and Anderman (1999) contend that the social organization of the school environment affects the achievement goal inclinations of the learner, especially on how they feel about the social environment. Recent research has shown that one's motivational predispositions are included in each role of one's life and considered key fundamentals of success. In accordance with that, achievement motivation emerges as the cornerstone of attaining accomplishments in academic surroundings (Kirikkanat, 2014).

Gifted learners place idealistically high prospects on themselves. In some cases, this may be affected by the romantically extraordinary expectations teachers, family members, or peers put on them. These learners may shun responsibilities in which high achievement is not assured, or they may withdraw to a sphere of imaginary (Niki and Lindsay, 2006). The need for the challenge is important for gifted learners (Freeman, 2000; Wallace, 2000). To gifted learners, the study revealed that challenge is an imperative motivator and tasks which are not challenging do not gratify the prerequisite for achievement (Lens and Rand, 2000). Gifted learners have been found to be fast in thinking, understanding and have amazing recalls of what they have learned (Wallace, 2000). Therefore, in classrooms with unfavourable learning environment, such learners face boredom that adversely affects their motivation levels (Lens and Rand, 2000; Montgomery, 2001; Shaughnessy, 2004).

Promoting choice and independence in students' learning has a motivating influence. In doing this the students' motivation increases and they work and develop their learning skills (Montgomery, 2001; Uresti *et al.*, 2002). Further study indicates that participation in co-curricular activities enhances gifted students' motivation to achieve and discover unrecognized capabilities and new interests (Olszewski-Kubilius and Lee, 2004).

Research findings indicate that teachers play a key role in motivating students in general as well as the gifted. The teacher's entire classroom techniques can motivate or prejudice interest and satisfaction. Apart from the pedagogical approaches, classroom philosophy and atmosphere create encouraging learning for the gifted learners to achieve, thus acting as a motivating influence. Additionally, the students' motivation is improved and encouraged by most of the teaching and learning facilities being made for them by their teachers (Kerry and Kerry, 2000; Niki and Lindsay, 2006).

2.3. Career Decision Making

Gifted persons are often faced with multi-potentiality, as it relates to career decision making concerns, including difficulty narrowing career options and overcoming outside pressure in pursuing high status due to several worthwhile options (Rysiew *et al.*, 1999). Achter *et al.* (1997) found in a large sample of gifted adolescents to extensively varying arrangements of abilities and interests. The findings further revealed that the challenges lie within the individual's multi-potentiality, but rather in the speculative basis in which gifted individuals' abilities and interests are conceptualized. Prior research also demonstrates that social and emotional intricacies accompany giftedness, many of which could potentially impact the career decision making (Gysbers, 2013). However, there is a postulation that gifted students are more intellectual, emotional, and behavioral forward-thinking, or more mature than usual students (Maxwell, 2007; Berman *et al.*, 2012) and gifted students require little guidance in a broad range of career-planning and exploration (Greene, 2006; Maxwell, 2007).

According to the results of the study by Ozcan (2017) gifted students are largely influenced in career decision making by their families, academic achievements, sense of social responsibility, and desire to manage the world around them. Additionally, the family settings and possessions also influenced gifted learners insights into their ability and interest. Other researchers, for instance, Watters (2010) found that gifted adolescents pursued academic careers in the field in which they were renowned.

3. METHODOLOGY

3.1. Research Design

The study employed ex-post facto research design. The choice of the design was based on the premises that it involves the collection of information from a sample that was drawn from a present population. It also explored the existence of the relationship between independent and dependent variables (Gupta, 2008). The design provided necessary in-depth of data analysis to make the findings relevant.

3.2. Participants

Participants included 74 male gifted and 56 female gifted students in secondary schools in Ugunja Sub County, Siaya County, Kenya. The ratio of males to females of the gifted students was 74 (56.9%) and 56 (43.1%) respectively. Students are designated as 'gifted' based upon their ranking on standardized test scores for the English language; Kiswahili and mathematics, in addition to their previous, primary examination mean mark. Gifted was operationalized to mean uniquely motivated high achieving students. Students were selected based upon attainment of a composite score of their previous Kenya's certificate of primary examination mean mark attained to join high school and their school standardized test scores.

3.3. Location of the Study

The study was conducted in Ugunja sub-County of Siaya County in Kenya. Ugunja Sub County has a good number of secondary schools whose students perform well in Kenya's national examinations and send quite a good number of students to public and private universities. Most secondary schools in Sub County have large populations in classes. The schools have a student body of approximately 5,000 students. Approximately 85% of the student populations are in day schools with about 15% in boarding schools.

3.4. Sampling Techniques and Sample Size

Stratified random sampling technique was employed to ensure that both male and female population of participants is represented in the sample in order to decrease the error in the estimation. The stratified sample comprised of two strata of male and female students. From each stratum, a sample, of pre-specified size, was drawn independently in different strata. The collection of these samples constituted a stratified sample. Simple random and purposive sampling techniques were used in this study to determine the suitable size for the study. The simple random sampling technique used was the lottery technique whereby ballot papers of equal size, same colour and texture, were cut. Only 130 pieces of these papers out of the others were labelled. Then they were placed in a container, mixed well, and then the participants were allowed to pick one piece at a time. Those participants who picked a labelled piece of paper were automatically selected for the study. The study used 10 % of the population giving a sample size of 74 male and 56 female gifted students were selected from 32 secondary schools in Ugunja subcounty; hence the total sample was 130 respondents. According to [Fraenkel and Wallen \(2003\)](#) a sample with a minimum number of about one hundred (100) respondents is essential for the study. Thus 130 participants were found the ideal for the study.

3.5. Research Instruments

The researcher used questionnaires to elicit information from students. Questionnaires were used to acquire the required quantitative data from the students on the learning environment, achievement motivation as a precursor to the career choice of gifted students. Content validity of the questionnaires was enhanced by the examination of the instruments by the researcher and participants of the pilot study. Therefore, the quantitative instrument (questionnaire) was amended after the pilot study. The content validity was therefore found appropriate in determining the extent to which the set of items provided were a representative sample of the area of study. In this study, the reliability coefficient of the items on the Likert Scale in the students' questionnaire was computed and yielded figures above 0.6 and considered reliable for the study ([Cronbach, 2005](#)).

3.6. Data Collection and Analysis

Data was a derivative of students' perceptions of real and ideal learning environment, achievement motivation correlated with career decision making among gifted students. Data were then collected from six indicators of the learning environment. The indicators were named as; Student cohesiveness, teacher support, involvement, investigation, task orientation, cooperation and equity. The questionnaire consisted of 30 items. Response options consist of Almost never, Seldom, Sometimes, Often, and almost always, which are scored 1–5 respectively.

Data collected were keyed into SPSS-version 20.0 for analysis. Factor analysis of the items was conducted and only those items with factor loadings of 0.50 or above were retained when calculating internal reliability for the study. Real and ideal perceptions for the total sample of gifted secondary school students were compared using the average item mean score for each of the six indicators of the learning environment. Descriptive statistics of mean

and standard deviation were employed. Inferential statistics including independent sample t-test was employed to establish the differences in perception of gifted students between real and ideal learning environment. Simple multiple regression analysis was used to identify associations between the six indicators of learning environment affecting the career decision making of gifted students. Spearman rank order correlation was used to establish relationships between the independent and dependent variables in the study.

3.7. Limitations and Constraints of Method

The main limitation of concern was to differentiate between the gifted and high achieving students as they almost display similar academic characteristics. In order to minimize this bias, students were instructed to indicate their Kenya Primary Certificate of Examination mean score to serve as a predictor variable between gifted and high achieving students. Another limitation was the unfeasibility to achieve complete impartiality while interpreting qualitative data. This restricted the extent to which generalizations can be made to other students.

4. RESULTS

The results of the null Hypothesis stated that there is no significant relationship between the classroom learning environment and achievement motivation is presented in Table 1.

** Given a significant level of 0.01 (2 tailed), when p is less than 0.01 there is a significant relationship.

The results of the above hypothesis are presented in Table 1.

Table-1. Correlation Matrix for Learning environment, achievement motivation and career decision making.

Variables	Learning Env	Achiev. Motivation	Career Decisions
Learning Env	1		
Achiev. motivation	.14	1	
Career Decisions	.72(**)	.02	1

**correlation is significant at the 0.01 level (2-tailed).

Table 1 shows the correlation between learning environment and achievement motivation. The result clearly reveals a strong significant relationship between students' learning environment and achievement motivation ($r = .72, p < 0.01$). This means that as students' learning environment increases achievement motivation also increases. The result further reveals that there is no significant relationship between students' achievement motivation and career decision making ($r = .02, p > 0.01$). This indicates that relationship exists but with insignificant effect on students' career decision making. Again, there is no significant correlation between learning environment and career decision making ($r = .14, p > 0.01$). This implies the non-existence of relationship between learning environment and career decision making among gifted students.

Table-2. Differences in real and ideal learning environment as perceived gifted secondary school students.

Learning environment indicators	Average item mean		Average item SD		Differences	
	real	Ideal	real	ideal	effect size	t
Emotional	5.01	4.48	0.57	0.47	0.85	17.34**
Physical protection	3.23	3.84	0.99	0.77	0.68	12.61**
Learning process	2.83	3.46	0.87	0.84	0.74	14.15**
Parent/community engagements	2.87	3.63	0.85	0.82	0.90	15.09**
Assessment mode	4.18	4.54	0.75	0.56	0.54	10.74**
Learning material	4.05	4.47	0.62	0.53	0.71	14.12**

Response options of Almost never, Seldom, Sometimes, Often and Almost always were scored 1–5, respectively ** $p < 0.01$, $N = 230$ gifted students.

Findings on differences in real and ideal on six factors of learning environment as perceived by gifted secondary school students are given in Table 2. The data analyzed by mean and standard deviation, and Independent sample t-test.

Table 2 shows for each of the six indicators of classroom learning environment the average item mean, average item standard deviation and the difference between perceptions of real and ideal learning environment for the total sample of gifted students ($N = 230$). For all six indicators of classroom learning environment, the average item mean was statistically significantly higher for students' perceptions of the ideal learning environment $p < 0.01$, with effect sizes ranging from 0.54 to 0.85 standard deviations. The greatest difference between the real and ideal learning environment was for the indicator of emotional/psychological protection with an effect size of 0.8 standard deviations. To determine if these differences were statistically significant, an Independent samples t-test for was employed to establish the differences between real and ideal learning environment. The results revealed statistically significant differences ($p < 0.05$) for all learning environment the indicators.

The results of the simple correlation and multiple regression analyses for the hypothesis on the associations between learning environment and career decisions of gifted students are reported in Table 3. The Spearman rank order correlation and simple multiple regression analysis are given.

Table-3. Spearman and simple multiple regression analyses for associations between learning environment and career decisions of gifted students.

Learning environment indicators	Association with Career decisions	
	r	β
Emotional/psychological protection	-0.02	-0.18**
Physical protection	0.44**	0.34**
Learning process	0.21**	0.00
Parent/community engagements	0.35*	0.24
Assessment mode	0.35**	0.22**
Learning materials	0.05	-0.09
Multiple correlation (R)		0.55**

N = 230 gifted students * $p < 0.05$, ** $p < 0.01$.

Spearman rank correlation (r) between the indicators of classroom learning environment and career decisions for gifted students were statistically significant ($p < 0.01$). The indicator of parent and community engagements in learners learning environment was significantly correlated with career decisions for gifted students ($p < 0.05$). Overall, Table 3 indicates that four out of six indicators (excluding emotional and psychological protection and Learning materials for learners) had statistically significant simple correlations with career decisions. Physical protection for learners in the learning environment had the strongest correlation with career decision making for gifted students. Students' emotional and psychological protection was the only scale to have a negative association with career decisions for gifted students ($r = -0.02$) although it was statistically insignificant.

Multiple regression analysis showed that the association between all six learning environment indicators and career decision making was statistically significant ($R = 0.55$; $p < 0.01$). To determine which environmental learning indicators were most strongly associated with career decision making for gifted students when other factors were controlled, standardized regression coefficients (β) were also examined. As indicated in Table 3, the indicators of physical protection and assessment mode ($p < 0.01$) were statistically significant predictors of achievement motivation. Student emotional and psychological protection had a statistically significant negative association ($p < 0.01$) with learning environment indicators and career decision making ($\beta = -0.18$). Parent and community engagements and Learning materials each had a small negative association with career decision making, though statistically insignificant.

5. DISCUSSIONS

The result of the hypothesis of the study showed that there is a significant relationship between learning environment and achievement motivation ($r = .72, p < 0.01$). This result is consistent with research by [Gherasim et al. \(2011\)](#) whose findings revealed that learning environment influences goals and motivation students adopt. This implied that if the classroom activities emphasize relative ability, grades, and performance, then students are likely to adopt performance-focused goals. However, the results contrast with the study by [Sikhwari \(2014\)](#) which indicated that learning environment has no significant relationship with achievement motivation. On achievement motivation and career decision making the relationship was insignificant ($r = .02, p > 0.01$). This result was consistent with findings of [Sikhwari \(2014\)](#) which showed insignificant relationship between students' achievement motivation and career decision making. However, the result is contrary to earlier research of [Marsh and Craven \(1997\)](#) who asserted that there is significant relationship between achievement motivation and career decision making.

With regard to differences in a real and ideal classroom learning environment as perceived by gifted secondary school students, this study concurs with prior findings that students prefer ideal learning environment compared to real or actual experienced in most of the school settings. Differences between gifted students' perceptions of their real and ideal classroom environments as measured by the six indicators were statistically significant. The greatest real-ideal difference occurred for the indicator of emotional and psychological protection of students whose effect size was 0.85 standard deviations. Gifted students perceive their ideal learning environment more favourable probably because more natural and nurturing. The results concur with the prior findings that indicated that students prefer a more favourable learning environment than the one that they perceive they are actually experiencing ([Peters et al., 2000](#)).

In the third null hypothesis, the simple correlation analysis revealed positive, statistically significant associations between four indicators of learning environment and gifted students' career decision making. The results agree with prior findings of [Ozcan \(2017\)](#); [Watters \(2010\)](#) who asserted that gifted learners are influenced by their families, academic achievements, sense of social responsibility, and desire to manage their career decisions. When the six learning environment indicators were considered together, the multiple correlations were statistically significant. These findings are in tandem past researchers which confirmed that learning environment where there is unsuitable challenge, learning pace too slow, with many repetitions, gifted learner learners become bored resulting in underachievement and career indecisions ([Lens and Rand, 2000](#); [Montgomery, 2001](#); [Shaughnessy, 2004](#)).

6. CONCLUSION

Relative to the main objectives of the research, conclusions can be summarized as follows;

The students' motivation was derived from the classroom learning environment. In addition, the students' motivation was underpinned on the kind of classroom learning environment. Like ideal environment was found to be positively correlated to achievement motivation and career decision making. However, there were few instances where classroom learning environment had resulted in inadequate challenges to their determination to succeed in career decision making. This aspect of motivation was strongly evident in the degree of commitment in the learning environment. For example, students' emotional and psychological protection showed negative insignificant association with career decision making ($r = -0.02$).

7. RECOMMENDATIONS

The study recommends for in-service training of all teachers so as to equip them with the knowledge and skills on how to identify and guide gifted learners in the learning environment. A curriculum and learning environment needs to be adapted to provide for the needs and unique abilities of gifted learners. Lastly, early identification of gifted learner needs to do from pre-schools in order to provide for gifted learners across the learning spectrum.

REFERENCES

- Achter, J.A., C.P. Benbow and D. Lubinski, 1997. Rethinking multipotentiality among the intellectually gifted: A critical review and recommendations. *Gifted Child Quarterly*, 41(1): 5-15. Available at: <https://doi.org/10.1177/001698629704100102>.
- Adeyemo, D.M., 2013. Parental involvement, interest in school and school environment as predictors of academic self-efficacy among fresh secondary school students in Oyo State, Nigeria. *Electronic Journal of Research in Educational Psychology*, 1(5-3): 163-180.
- Anderman, L.H. and E.M. Anderman, 1999. Social predictors of changes in students' achievement goal orientations. *Contemporary Educational Psychology*, 24(1): 21-37. Available at: <https://doi.org/10.1006/ceps.1998.0978>.
- Bandura, A., 1997. *Self-efficacy; the exercise of control*. New York: Freeman.
- Berman, K., R. Schultz and C. Weber, 2012. A lack of awareness and emphasis in preservice teacher training: Preconceived beliefs about the gifted and talented. *Gifted Child Today*, 35(1): 18-26. Available at: <https://doi.org/10.1177/1076217511428307>.
- Butler, R., 2000. What learners want to know: The role of achievement goals in shaping information seeking, learning and interest. In C. Sansone & J. W. Harackiewicz (Ed.), *Intrinsic and Extrinsic Motivation: The Search for Optimal Motivation and Performance*. USA: Academic Press. pp: 161-194.
- Corpus, J.H., M.S. McClintic-Gilbert and A.O. Hayenga, 2009. Within-year changes in children's intrinsic and extrinsic motivational orientations: Contextual predictors and academic outcomes. *Contemporary Educational Psychology*, 34(2): 154-166. Available at: <https://doi.org/10.1016/j.cedpsych.2009.01.001>.
- Cronbach, L.J., 2005. Test 'reliability: Its meaning and determination. *Psychometrika*, 12(1): 1-16. Available at: <https://doi.org/10.1007/bf02289289>.
- Elewana Education Project, 2016. *Elewana in partnership with education for Kenya*. Nairobi, Kenya: Elewana Publisher.
- Elliot, A.J. and T.M. Thrash, 2001. Achievement goals and the hierarchical model of achievement motivation. *Educational Psychology Review*, 13(2): 139-156.
- Fraenkel, J.R. and N.E. Wallen, 2003. *How to design and evaluate research in education*. NY: McGraw-Hill.
- Freeman, J., 2000. Families: The essential context for gifts and talents. *International Handbook of Giftedness and Talent*, 2: 573-585. Oxford: Pergamon Press.
- Friend, M., 2008. *Special education: Contemporary perspectives for school professionals*. 2nd Edn., USA: Pearson Education Inc.
- Gardner, H. and T. Hatch, 1991. Multiple intelligences go to school: Educational implication of the theory of multiple intelligences. *Educational Researcher*, 18(8): 4-9.
- Gherasim, L.R., S. Butnaru and L. Iacob, 2011. The motivation, learning environment and school achievement. *International Journal of Learning*, 17(12): 353-364.
- Greene, B.A., R.B. Miller, H.M. Crowson, B.L. Duke and K.L. Akey, 2004. Predicting high school students' cognitive engagement and achievement: Contributions of classroom perceptions and motivation. *Contemporary Educational Psychology*, 29(4): 462-482. Available at: <https://doi.org/10.1016/j.cedpsych.2004.01.006>.

- Greene, M.J., 2006. Helping build lives: Career and life development of gifted and talented students. *Professional School Counseling*, 10(1): 2156759X0601001. Available at: <https://doi.org/10.1177/2156759X0601001s05>.
- Gregory, A. and R.S. Weinstein, 2004. Connection and regulation at home and in school: Predicting growth in achievement for adolescents. *Journal of Adolescent Research*, 19(4): 405-427. Available at: <https://doi.org/10.1177/0743558403258859>.
- Gupta, J.S., 2008. *Statistical methods*. New Delhi: Sultan Chand & Sons Educational Publisher.
- Gysbers, N.C., 2013. Career-ready students: A goal of comprehensive school counseling programs. *The Career Development Quarterly*, 61(3): 283-288. Available at: <https://doi.org/10.1002/j.2161-0045.2013.00057.x>.
- Heward, W.L., 2006. *Exceptional children: An introduction to special education*. 8th Edn., New Jersey: Merrill Prentice Hall.
- Kahyaoglu, M., 2013. A comparison between gifted students and non-gifted students' learning styles and their motivation styles towards science learning. *Academic Journals*, 8(12): 890-896.
- Kamunge Report, 1988. Report of the presidential working party on education and manpower training for the next decade and beyond. Nairobi: Government Printers.
- Kerry, T. and C. Kerry, 2000. The centrality of teaching skills in improving able pupil education. *Educating able Children*, 4(2): 13-19.
- Kipkoech, L.C., J.N. Kindiki and T.P. Jepchirchir, 2011. Effects of attitudes of academically talented students on performance: An ability or disability? *Problems of education in the 21st century*, 29. *Pedagogical and Psychological issues in Education*, 29: 63-70.
- Kirikkanat, B., 2014. Achievement motivation: Its structure and relation with learning environments. *Journal of Psychological Counseling and Education*, 1(1): 77-90.
- Koech Report, 1999. Report on totally integrated quality education and training in Kenya. Nairobi: Government Printers.
- Lens, W. and P. Rand, 2000. Motivation and cognition: Their role in the development of giftedness. *International Handbook of Giftedness and Talent*, 2: 193-202. Available at: <https://doi.org/10.1016/b978-008043796-5/50014-0>.
- Lüdtke, O., A. Robitzsch, U. Trautwein and M. Kunter, 2009. Assessing the impact of learning environments: How to use student ratings of classroom or school characteristics in multilevel modeling. *Contemporary Educational Psychology*, 34(2): 120-131. Available at: <https://doi.org/10.1016/j.cedpsych.2008.12.001>.
- Marsh, H.W. and R.G. Craven, 1997. Academic self-concept: Beyond the dustbowl. In G. Phye (Ed.), *Handbook of classroom assessment: Learning, achievement and adjustment*. US: Academic Press. pp: 131-198.
- Maxwell, M., 2007. Career counseling is personal counseling: A constructivist approach to nurturing the development of gifted female adolescents. *The Career Development Quarterly*, 55(3): 206-224. Available at: <https://doi.org/10.1002/j.2161-0045.2007.tb00078.x>.
- Montgomery, D., 2001. Teaching the more able: An update. *Gifted Education International*, 15(3): 262-280. Available at: <https://doi.org/10.1177/026142940101500305>.
- Niki, P. and G. Lindsay, 2006. Motivation in gifted students. *High Ability Studies*, 17(1): 57-73.
- Olszewski-Kubilius, P. and S.-Y. Lee, 2004. Parent perceptions of the effects of the Saturday enrichment program on gifted students' talent development. *Roeper Review*, 26(3): 156-165. Available at: <https://doi.org/10.1080/02783190409554261>.
- Ozcan, D., 2017. Career decision-making of the gifted and talented. *South African Journal of Education*, 37(4): 1-8.
- Peters, W.A., H. Grager-Loidl and P. Supplee, 2000. Underachievement in gifted children and adolescents: Theory and practice. *International Handbook of Giftedness and Talent*, 2: 609-620. Available at: <https://doi.org/10.1016/b978-008043796-5/50043-7>.
- Regional Education Laboratory, 2007. The learning environment: Meeting the needs of gifted students. 47(3): 289-304. Available from http://www.nwrel.org/msec/just_good/9/ch5.html [Accessed 3/12/2007].

- Republic of Kenya, 2003. National action plan on education for all 2003-2015. Ministry of Education, Science and Technology. Government Printers: Nairobi, Kenya.
- RoK, 2005. Sessional Paper No. 1 of 2005 on a policy framework for education, training and research. Ministry of Education, Science and Technology, Government Printers: Nairobi, Kenya.
- Rysiew, K.J., B.M. Shore and R.T. Leeb, 1999. Multipotentiality, giftedness, and career choice: A review. *Journal of Counseling & Development*, 77(4): 423-430. Available at: <https://doi.org/10.1002/j.1556-6676.1999.tb02469.x>.
- Sambu, M.C., J.S. Kalla and S.W. Njue, 2014. Educating learners identified by teachers as gifted and talented in primary schools in Wareng District, Uasin Gishu County, Kenya. *International Journal of Humanities and Social Science*, 4(11): 237-243.
- Sampson, C., 2013. Social and emotional issues of gifted young children. *APEX: The New Zealand Journal of Gifted Education*, 18(1): 1-10. Available at: <https://doi.org/10.21307/apex-2013-007>.
- Shaughnessy, M.F., 2004. A reflective conversation with Joan Freeman. *Gifted Education International*, 18(3): 283-290. Available at: <https://doi.org/10.1177/026142940401800307>.
- Sikhwari, T., 2014. A study of the relationship between motivation, self-concept and academic achievement of students at a University in Limpopo Province, South Africa. *International Journal of Educational Sciences*, 6(1): 19-25. Available at: <https://doi.org/10.1080/09751122.2014.11890113>.
- Steinmayr, R. and B. Spinath, 2009. The importance of motivation as a predictor of school achievement. *Learning and Individual Differences*, 19(1): 80-90. Available at: <https://doi.org/10.1016/j.lindif.2008.05.004>.
- Taboada, A., S.M. Tonks, A. Wigfield and J.T. Guthrie, 2009. Effects of motivational and cognitive variables on reading comprehension. *Reading and Writing*, 1(22): 85-106. Available at: <https://doi.org/10.1007/s11145-008-9133-y>.
- Uresti, R., J. Goertz and E.M. Bernal, 2002. Maximizing achievement for potentially gifted and talented and regular students in a primary classroom. *Roeper Review*, 25(1): 27-31. Available at: <https://doi.org/10.1080/02783190209554194>.
- Wail, M.I., H. Zaharah, A. Asmawi and S. Siraj, 2013. A comparative study on the relationship between meta-cognitive thinking and motivation for achievement among gifted and non-gifted secondary school students in Irbid City, Jordan. *The Online Journal of Distance Education and e-Learning* 1(3): 1-12.
- Wallace, B., 2000. Teaching the very able child: Developing a policy and adopting strategies for provision. London: David Fulton Publishers.
- Wang, J.H.-Y. and J.T. Guthrie, 2004. Modeling the effects of intrinsic motivation, extrinsic motivation, amount of reading, and past reading achievement on text comprehension between US and Chinese students. *Reading Research Quarterly*, 39(2): 162-186. Available at: <https://doi.org/10.1598/rrq.39.2.2>.
- Watters, J.J., 2010. Career decision making among gifted students: The mediation of teachers. *Gifted Child Quarterly*, 54(3): 222-238. Available at: <https://doi.org/10.1177/0016986210369255>.

Online Science Publishing is not responsible or answerable for any loss, damage or liability, etc. caused in relation to/arising out of the use of the content. Any queries should be directed to the corresponding author of the article.