

THE INFLUENCE OF TEACHER'S GENDER ON THE IMPLEMENTATION OF ENGLISH LANGUAGE CURRICULA IN PUBLIC SCHOOLS IN AQABA GOVERNORATE, JORDAN

Eman Saleh Al- Sagier Shaiegy¹ 

¹Ministry of Education, Jordan

ARTICLE INFO

Received: 06 Feb 2022
Revised: 25 April 2022
Accepted: 28 April 2022

Keywords:

Teacher's Gender
Curriculum Implementation
Classroom

Corresponding Author:

Eman Saleh Al- Sagier Shaiegy

Email:

emanshaiegy@yahoo.com

Copyright © 2022 by author(s).

This work is licensed under the
Creative Commons Attribution
International License (CC BY 4.0).
<http://creativecommons.org/licenses/by/4.0/>



ABSTRACT

Purpose: This study examined the influence of teacher's gender on the implementation of English language curricula in public schools in Aqaba governorate.

Methods: Employing a descriptive survey design, 167 male and female English language teachers were selected purposively and participated from 240 English language teachers in public schools in Aqaba governorate. A 36- item questionnaire, which was used for collecting data, was validated by twenty one jurors. Its reliability was ensured by using a test- retest technique which was piloted sample of twenty male and female English language teachers who were not included the main sample. To analyze data, a descriptive statistics was employed.

Findings: The findings of the study showed that there are not statistically significant differences at ($\alpha \leq 0.05$) in the implementation of English language curricula due to the teacher's gender. This implies that the implementation of English language curricula by male and female teachers in Aqaba governorate is not impacted by the gender of the teacher. Therefore, the study recommends carrying out more studies to ascertain the influence of teacher's gender on the implementation of English language curricula and other curricula.

Practical Implications: The results of the study might be of practical value for ministry of education since there is no gender effect on implementing the English curriculum.

Originality/Value: The gender of the teacher does not have a statistical effect on the implementation of English language curricula in public schools in Aqaba governorate.

INTRODUCTION

Instruction is an art and therefore few are born to be teachers. The main variable in the execution of a curriculum is the teacher. This is because the teacher interprets the proposed goals of the curriculum and carries out the actual execution by Instruction. Garba (2004) recognized the teacher as the architect of curriculum implementation in the classroom. In his assertion, curriculum implementation at the classroom level is essentially the responsibility of the teacher. It is the teacher who translates the objectives, concepts, and topics in the curriculum into meaningful activities for the students. It has been perceived for quite a while that the teachers have a significant part in deciding and executing the educational program. They interpret, offer life to the curriculum, and translate curriculum aims into classroom practices (Norris, 1998). There are many factors which influence the implementation of English language curricula such as academic and professional qualifications, teaching

experience, motivation, competence, methodology, teaching techniques, belief, age, satisfaction and attitude. The gender of the teacher is also one of these factors. Gender has been defined in different contexts but in the current study, gender refers to male or female. Both male and female teachers are responsible for implementing curricula in schools.

Some studies have revealed that there are differences between male and female teachers in the implementation of the curricula because each of them instructs in a different way from the other and faces problems and challenges that stand in his / her way while implementing curriculum in different ways (Laird, Garver & Niskode, 2007). Lacey, Saleh and Gormans' study (1998) showed that the teaching methods differed according to the gender of the teacher. Singer (1996) found in his study that teacher gender was an important indicator of teachers' instructional practices and behavior in instructing. According to Statham, Richardson and Cook (1991), they found that female teachers spent more time encouraging students and allowing them to participate in their instructing compared to male teachers. Duffy, Warren, and Walsh (2001) pointed that female teachers spend at least 58% of their class time interacting with boys and a maximum of 42% of their time interacting with male students. On the other hand, male teachers tend to help students more often but in periods of time shorter, which benefits male students more than females. The findings of the study by Laird, Garver and Niskode (2007) revealed that there were differences between male and female teachers in the percentage of time each of them spent in classroom activities and the measurement of teaching style. Kuh, Nelson Laird and Umbach (2004) indicated in their study that female teachers used effective instructional practices like focusing on academic challenge and enriching instructional experiences more than male teachers.

Several studies of Erlauer, 2003; Gabriel & Schmitz, 2007; Galotti, 2014 ; Gauthier, Duyme, Zanca, & Capron, 2009; Giedd et al., 1994; Grasha, 1994; Gurian & Steven, 2010; Jensen, 1995; Jensen, 2000; Jensen, 2005; Levy & Heller, 1992; Measor & Sikes, 1992; Putnam et al., 2008; Ruytjens, Albers, van Dijk, Wit, & Willemsen, 2007; Sousa, 2011 and Zaidel & Sperry, 1974 have shown that the differences between male and female teachers explain internal differences in cognitive ability and skills such as memory storage and the allocation of attention, self-awareness, self-motivation, and self-management levels in addition to the internal physiological process of the brain and this indicates that changing internal cognitive abilities will have an effect on teachers' implementation of curricula.

Some studies indicated that the performance of female teachers in implementing curricula was worse compared to their fellow of male teachers, especially in mathematics. A study conducted by Dee (2007) revealed that the performance of female teachers was worse in math, but he justified that the reason was that they were assigned to instruct low - performing students. On the other hand, Muralidharan and Shed (2016) pointed out that the performance of female teachers in instructing female students was better than their male colleagues but it was not bad in instructing male students. In the same vein, Chudgar and Sankar (2008) conducted a study in five Indian states and the results of this study supported Muralidharan and Sheds' idea (2016) that a female teacher is better in India and that the instructing of female teachers is very useful for language learning.

Previous studies indicated that there are a number of reasons associated with students being slightly biased towards female teachers, including empathetic listening, better understanding and showing interest. The findings of Spilt et al., 2012 study showed that female teachers are able to establish better relationships with female students compared to their male colleagues but not bad with male students. Bodhe et al., (2015) conducted a study and its results showed that the students did not find the gender of the teacher worth discrimination because from the point of view of Bar et al., (2006) the teacher who wears clean and elegant clothes gives a good first impression as he attracts students' attention well and facilitates the learning process. Shah and Udgaonkar (2018) study indicated that there was no clear significant difference in the

preference of the male or female teacher but from the students' observation it was clear that female students felt they could interact better with female teachers. Very few intrepid students noticed that the opposite gender attracted. In their study, they also added that some students who liked male teacher noticed that males had better control over the class due to their strict nature.

A same-gender teacher is considered an important factor in developing the performance of male and female students, in addition to developing the perceptions of teachers of both gender. Several studies have found the same-gender effects on teaching practice and thus the effect on students' performance as studies of Rawal and Kingdon (2010), Muralidharan and Sheth (2016). Other studies have also found limited impacts of same-gender teachers in some countries (Holmlund and Sund, 2008; Cho, 2012 and Spilt et al., 2012). On the other hand, a number of studies did not find impacts of the same – gender teachers on curriculum implementation and students' performance (Neugebauer et al., 2011; Winters et al, 2013; de Zeeuw et al., 2014; Antecol et al., 2015 and Coenen and Van Claveren, 2016). Despite the conclusion that Dee reached in his study, which revealed that the performance of male students was better when they were taught by male teachers and that the performance of female students was better when taught by female teachers but it did not call for single-sex education.

The teacher plays an important and essential role in raising the level of the performance of students (Hopkins, 1997). Literature indicated to the effect of teachers' gender on the academic achievement of students (Akiri & Ugborugbo, 2008). Saha (1983) mentioned that male teachers were more successful in scientific subjects while female teachers were more successful in teaching language and related subjects. This result was asserted by Beilock et al., 2010 and Gunderson et al., 2012). The results of a study conducted by Carrel (2010) showed that the female teacher has a positive impact on the results of female students' performance because female teachers in higher education levels did not suffer from mathematics anxiety due to their mathematical backgrounds. Dee (2007) found that there were few positive impacts of the teachers' gender in English language and science but these impacts were not statistically significant at conventional levels.

Some previous studies indicated that the gender of teachers did not significantly influence students achievement (Fausto-Sterling, 1988; Warwick and Jatoi, 1994; Feildman, 1995; Michaelowa, 2001; Rivkin, 2005; Kimani, 2013; Odiembo & Simatwa, 2014; Alufohain & Ibhafidon, 2015; Kimura, 2000). According to Dee (2007) appointing a female teacher was associated with lower math test scores for female students in eighth grade. Kimani (2013) mentioned that the negative impact of female teachers on female students' results in mathematics in secondary school of Bukulula Sub County was because they suffered from anxiety about mathematics.

In building this study, the researcher relied on her observations and on the results of many previous research and studies that proved the positive or negative impact of the gender of the teacher on the implementation of curricula so the researcher wanted to investigate the influence of this factor related to teacher on the implementation of English language curricula. The importance of this study due to the fact that it provides the officials with real information about the impact of teacher's gender on the implementation of English language curricula and encourage those interested to conduct more studies on the importance and impact of the gender of the teacher on the implementation of the curricula which may be used when appointing the appropriate teachers.

REVIEW OF LITERATURE

Several empirical studies related to the effect of teacher's gender on the implementation of curricula were referred to and these studies include the following:

Aqel (2002) investigated the extent to which English language teachers in Nablus schools practice the principles of effective teaching. The study sample consisted of 46 male and female teachers. The study used a questionnaire. The results of the study showed that there were statistically significant differences between male and female teachers' assessment of the degree of effective teaching practice according to the gender variable in favor of female teachers.

Oduro-Bediako (2009) examined public school teachers' gender, years of teaching experience, knowledge, and perceptions as predictors of their implementation of brain-based learning practices in K-12 classrooms. The sample of the study was 422 teachers from K-12 schools within the United States public school system. The study adopted the analytical tool, Multiple Linear Regression. The results indicated that gender and years of teaching experience had no relationship with implementation of BBL.

Barakat (2010) aimed to investigate the reality of teachers' teaching practices through knowing the effectiveness of the teacher in practicing the skill of asking and receiving classroom questions and how to deal with students' answers to them and the impact of gender, school type, specialization, years of experience and academic qualifications of the teacher. The sample of the study was 190 male and female teachers from public schools in Tulkarm. The results revealed that there were significantly significant differences in the effectiveness of teachers in their teaching practices in the skill of asking and receiving questions due to the gender variable and the type of school in which the teacher works in favor of the female teachers and the secondary stage.

Burusic (2012) examined the influence of teachers' gender and their experience on their teaching practices in Europe where the study included a number of countries in Europe at the same time and included 48232 male and female teachers. The results showed that the teaching practices of primary school teachers are affected by the gender of the teacher in favor of females while it was not affected by his / her teaching experience. The practices of secondary school teachers were not significantly affected by gender but it was affected by the teaching practice.

Hindi and Tamimi (2013) examined the degree of estimation of classroom teaching practices for Islamic education teachers at the secondary stage in government schools in Zarka and their relation to gender and experience variables from constructivist perspective. The study sample comprised of 88 male and female teachers. A questionnaire was used to achieve the study objectives. The results showed that there were no statistically significant differences due to the gender variable.

Hussain and Hamodeh (2016) investigated the reality of teaching practices sciences teachers at UNRWA primary schools in Jordan from their point of view and their relationship to gender and teaching experience. The sample of the study was selected purposively and it consisted of 30 male teachers from 8 schools, and 30 female teachers from 5 schools and 2 from a mixed schools. A questionnaire was utilized to collect data. The findings revealed that there were statistically significant differences due to gender variable of the teacher and in favor of female teachers.

Al-Eidi (2017) investigated the level of classroom instructional practices applied by English teachers on the primary stage students and its relationship with the gender of the teachers and their teaching experience (short, medium, and long) and the interaction between gender and experience. The sample comprised of 43 male and female teachers of English. A questionnaire was constructed to measure the teaching practices of the sample. The results of the study showed that the level of classroom instructional practices of the English teachers of the primary stage has improved with the mean of 4.03. The findings revealed that there were statistically significant differences due to the gender variable in the favor of the females.

Albtoosh (20017) examined the level of classroom teaching practices of Islamic education teachers for the basic stage in the Education Directorate of the Southern Mazar in the Karak governorate and their impact on the variables of gender and teaching experience. The study sample consisted of 150 male and female teachers. A questionnaire was utilized. The findings showed that there was no statistically significant difference in the classroom teaching practices of Islamic education teachers due to the gender variable.

Shah and Udgaonkar (2018) conducted a study aimed at investigating the influence of gender and age of teachers on teaching from students' perspective. A questionnaire was distributed to 75 students. The study showed that there was no significant difference in the preference of the female or male teacher. The researchers noticed that most of the students did not feel the gender of the teacher constitutes as a barrier in teaching until the teacher becomes active and interested in instructing but they noticed that the female students preferred female teachers because they are characterized by mercy, work hard and sincerely

METHODOLOGY

Design of the Study

To fulfill the objective of the study, a descriptive survey design was utilized because it allowed to get extensive, orderly and in-depth information .

Population and Sampling of the Study

According to the statistics of the Education Directorate of Aqaba for the year 2020, the population of the study comprised of 240 English language teachers (66 males and 174 females). The participants were 167 and they were selected purposively (119 females and 48 males).

Instrument of the Study

The questionnaire was used and it included two parts: the first had demographic data such as gender, age, years of experience, and qualification and the second had six domains (content, objectives, educational activities, educational aids, teaching methods and evaluation) and each domain had six items so the items of the questionnaire were 36. The participants were asked to select the suitable answer from five Likert scale.

Validity of the Instrument

To ensure the face validity of the questionnaire, it was reviewed by twenty one jurors from university professors, supervisors and teachers. The jurors were asked to check the wording, suitability and consistency of the questionnaire items. They were also asked to express their views regarding the demographic data required from the participants. Some comments and suggestions were taken into consideration and changes on the questionnaire were made accordingly. To make sure of the construct validity of the questionnaire, correlation coefficients were calculated and they were acceptable as shown in table (1).

Table 1. Correlation Coefficients between the Item and the Total Score and the Domain to Which it Belongs for the Scale of Curriculum Implementation

Item #	R With Domain	R With total score	Item #	R With Domain	R With total score	Item #	R With Domain	R With total score
1	.70**	.67**	13	.78**	.84**	25	.83**	.81**
2	.75**	.71**	14	.90**	.87**	26	.81**	.69**
3	.79**	.80**	15	.92**	.90**	27	.83**	.76**
4	.92**	.90**	16	.94**	.93**	28	.76**	.68**
5	.90**	.92**	17	.85**	.80**	29	.85**	.90**

6	.75**	.71**	18	.87**	.78**	30	.88**	.94**
7	.93**	.97**	19	.90**	.91**	31	.91**	.90**
8	.91**	.89**	20	.94**	.94**	32	.89**	.84**
9	.91**	.83**	21	.92**	.90**	33	.94**	.82**
10	.95**	.92**	22	.91**	.90**	34	.93**	.84**
11	.84**	.77**	23	.97**	.96**	35	.94**	.79**
12	.87**	.82**	24	.90**	.86**	36	.85**	.74**

* Correlation is significant at the (0.05) level

**Correlation is significant at the (0.01) level

The results from the previous table shows that the correlation coefficients were appropriate and so none of this questionnaire item were omitted.

Reliability of the Instrument

Test- retest was utilized to ensure the reliability of the questionnaire. The questionnaires were distributed to a sample of twenty male and female English language teachers in Aqaba governorate. The questionnaires were redistributed to the same sample two weeks after distributing the questionnaires for the first time and this sample was excluded from the sample of the study. Then the Pearson Correlation Coefficients were calculated and the values in the underneath table were considered appropriate to ensure the reliability of the questionnaire.

Table 2. Test - Retest of the Study Domains

Domains	Test-retest
Content	.881(**)
Outcomes	.946(**)
Educational activities	.887(**)
Educational aids	.824(**)
Teaching methods	.936(**)
Evaluation	.784(**)
Curriculum implementation scale	.901(**)

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

To ensure the questionnaire reliability, Cronbach alpha was also calculated. The values were acceptable as shown below in table (3).

Table 3. The Reliability Level for Study Domains

N	Domains	Cronbach alpha
1	Content	0.82
2	Outcomes	0.83
3	Educational activities	0.83
4	Educational aids	0.81
5	Teaching methods	0.82
6	Evaluation	0.82
	Curriculum implementation scale	0.95

Data Collection

In the second semester of the academic year 2020- 2021, the questionnaires were distributed electronically to the sample of the study .

Data Analysis

To analyze data, statistical analysis was employed in the current study.

RESULTS AND DISCUSSION

The question of the present study states that " Does the implementation of English language curricula differ according to teachers' Gender (Male or Female)?"

To find out whether there are statistically significant differences ($\alpha \leq 0.05$) in the means of the implementation of English language curricula due to teachers' Gender, t-test analysis was conducted and the results are shown in table (4)

Table 4. T-test Results of the Implementation of English Language Curricula According to Teachers' Gender Variable

Domains	Teacher's Gender	N	Means	Std. Deviation	t	DF	Sig. (2-tailed)
Content	Male	48	4.18	.442	.716	165	.475
	Female	119	4.13	.485			
Outcomes	Male	48	4.20	.477	1.086	165	.279
	Female	119	4.11	.519			
Educational activities	Male	48	4.11	.454	1.206	165	.229
	Female	119	4.01	.519			
Educational aids	Male	48	4.07	.435	-.322	165	.748
	Female	119	4.10	.500			
Teaching methods	Male	48	4.07	.465	.746	165	.457
	Female	119	4.01	.499			
Evaluation	Male	48	4.35	.411	.680	165	.497
	Female	119	4.30	.473			
Curriculum implementation scale	Male	48	4.17	.381	.814	165	.417
	Female	119	4.11	.425			

The findings from table (4) reveals that there are no statistically significant differences at ($\alpha \leq 0.05$) in the implementation of English language curricula due to teachers' Gender in all variables. This means that the instructional practices for male and female teachers and their implementation of the curricula do not differ substantially according to the gender.

The researcher attributed the reason for the absence of statistically significant differences in the implementation of English language curricula due to gender variable to the similarity of the instructing conditions and the similar nature of the functional tasks performed by teacher, regardless of their gender which removed the differences between male and female teachers. The result can be also attributed to the fact that teachers of both genders have been exposed to the same university programs, training courses, educational experiences and preparation whether before or during service. The researcher attributed this result to the intellectual and scientific awareness and awareness of both gender on how to implement English language curricula, in addition to that they practice their work according to similar educational plans and facilities. This leads to say that the English language curricula can be implemented effectively regardless of the teacher's gender.

The result of the study question agreed with the result of Aqel (2002), Oduro-Bediako (2009), Hindi and Tamimi (2013) and Albtoosh (20017). On the other hand, the result of the present study differed with the studies of Barakat (2010), Burusic (2012), Hussain and Hamodeh (2016), Al-Eidi (2017) and Shah and Udgaonkar (2018).

CONCLUSION AND SUGGESTION

It is clear from the results that have been reached that the gender of the teacher does not have a statistical effect on the implementation of English language curricula in public schools in Aqaba governorate. Therefore, the study recommends conducting several studies to find out the impact of teacher's gender on the implementation of curricula especially that this study found that the gender of the teacher does not affect the implementation of

English language curricula while some studies showed the effect of teacher's gender so extensive studies should be conducted in this regard.

REFERENCES

- Akiri, A. A., & Ugborugbo, N. M. (2008). An examination of gender's influence on teachers' productivity in secondary schools. *Journal of Social Sciences*, 17(3), 185-191. <https://doi.org/10.1080/09718923.2008.11892650>
- Albtoosh, A.M. (2017). Classroom teaching practices of Islamic education teachers at the basic stage in the Karak governorate- the Directorate of Education of the Southern Mazar District and their impact on the variables of gender and teaching experience. *Journal of Education*, 36 (175), 423- 460. <http://dx.doi.org/10.5296/ije.v7i3.7397>
- Antecol, H., Ozkan, E. & O. Serkan. (2015). The effect of teacher gender on student achievement in primary school: Evidence from a randomized experiment. *Journal of Labor Economics* 33 (6453), 38. <https://doi.org/10.1086/677391>
- Aqel,f.(2002). English language teacher's implementation of effective teaching principles in Nablus schools. *An-najah University Journal for Research (Humanities)*, 16(2), 241- 468. <http://hdl.handle.net/20.500.11888/2364>
- Bar, M., Neta. M. & Linz, H. (2006). Very first impression. *Emotion*. 6(2), 269-278. <https://psycnet.apa.org/doi/10.1037/1528-3542.6.2.269>
- Beilock, S. L., Gunderson, E., Ramirez, G., & Levine, S.C. (2010). Female teachers' math anxiety affects girls' math achievement. *Proceedings of the National Academy of Sciences of the United States of America*, 107 (5), 1860–63. <https://doi.org/10.1073/pnas.0910967107>
- Burusic, W. A. (2012). A competency based systems approach to teacher education: in competency based teacher education: A system approach to program design. *Journal of Teacher Education*, 24(1), 75-96.
- Carrel, S.E., page, M.E & west, J.E. (2010). Sex and science: How professor gender perpetuates gender gap*. *Quarterly Journal of Economics*, 125 (3), 1101-1144. <https://doi.org/10.3386/w14959>
- Cho, I. (2012). The effect of teacher-student gender matching: Evidence from OECD countries. *Economics of Education Review*, 31 (3), 54–67. <https://doi.org/10.1016/j.econedurev.2012.02.002>
- Chudgar, A., & Sankar, V. (2008). The relationship between teacher gender and student achievement: Evidence from five Indian states. *Compare: A Journal of Comparative and International Education*, 38 (5), 627– 42. <https://doi.org/10.1080/03057920802351465>
- de Zeeuw, E. L., van Beijsterveldt, C. E., Glasner, T. J., Bartels, M., de Geus, E. J., & Boomsma, D. I. (2014). Do children perform and behave better at school when taught by same-gender teachers? *Learning and Individual Differences*, 36, 152-156. <https://doi.org/10.1016/j.lindif.2014.10.017>
- Dee, T. S. (2007). Teachers and gender gaps in students achievement. *International journal of Human Resource*, 42 (3&5), 28-54. <https://www.jstor.org/stable/40057317>
- Duffy, J., Warren, K., & Walsh, M. (2001). Classroom interactions: Gender of teacher, gender of student, and classroom subject. *Sex roles: A Journal of Research*, 45 (9-10), 579-593. <https://doi.org/10.1023/A:1014892408105>
- Fehrler, S., Michaelowa, K., & Wechtler, A. (2009). The effectiveness of inputs in primary education: Insights from recent student surveys for Sub-Saharan Africa. *Journal of Development Studies*, 45 (9), 1545–78. <https://doi.org/10.1080/00220380802663625>
- Fieldman, I. (1995). The space factor in mathematics. Gender differences. *Review of educational research*, 65(1), 22-32. <https://doi.org/10.3102/00346543065001022>

- Gauthier, C. T., Duyme, M., Zanca, M., & Capron, C. (2009). Sex and performance level effects on brain activation during a verbal fluency task: A Functional Magnetic Resonance Imaging Study. *Cortex*, 45(2), 164–76. <https://doi.org/10.1016/j.cortex.2007.09.006>
- Giedd J. N., Castellanos F. X., Casey B. J., Kozuch, P., King, A. C., Hamburger, S. D., & Rapoport, J. L. (1994). Quantitative morphology of the corpus callosum in attention deficit hyperactivity disorder. *American Journal of Psychiatry*, 151 (5), 665 – 669. <https://doi.org/10.1176/ajp.151.5.665>
- Grasha, A. F. (1994). A Matter of Style: The teacher as expert, formal authority, personal model, facilitator, and delegator. *College Teaching*, 42(4), 142-149. <https://doi.org/10.1080/87567555.1994.9926845>
- Gunderson, E. A., Ramirez, G., Levine, S. C., & Beilock, S. L. (2012). The role of parents and teachers in the development of gender-related math attitudes. *Sex Roles*, 66 (3-4), 153-166. <https://doi.org/10.1007/s11199-011-9996-2>
- Hindi .S,& Tamimi, i.(2013).Classroom teaching practices of Islamic education teachers in the secondary stage in Zarka g governorate from constructive perspective and their relation with some variables. *Journal of Educational and Psychological Sciences*, 14 (1), 247-280. <http://dx.doi.org/10.12785/JEPS/140109>
- Holmlund, H., & Sund,K. (2008). Is the gender gap in school performance affected by the sex of the teacher? *Labour Economics*, 15 (1), 37–53. <https://doi.org/10.1016/j.labeco.2006.12.002>
- Hussain,J.A & Hamodeh, M .I. (2016). Classroom teaching practices of science teachers in basic schools from their viewpoint and its relation to their gender and teaching experience. *Mutah for Research and Studies, Humanities and Social Sciences*,31(3), 273- 300.
- Jensen, E. (2000). Brain-based learning: A reality check. *Educational leadership*, 57(7), 76 - 80.
- Kimani NG, Kara MA, Njagi WL. (2013). Teacher factors influencing students’ academic achievement in secondary schools in Nyandarua county, Kenya. *International Journal of Education and Research*, 1(3), 1-14.
- Michaelowa, K. (2001). Primary education quality in Francophone Sub-Saharan Africa: determinants of learning achievement and efficiency considerations. *World Development*, 29 (10), 1699–1716. [https://doi.org/10.1016/S0305-750X\(01\)00061-4](https://doi.org/10.1016/S0305-750X(01)00061-4)
- Neugebauer, M., Helbig, M. & A. Landmann. (2011). Unmasking the myth of the same-sex teacher advantage. *European Sociological Review*, 27 (5), 669– 89. <http://dx.doi.org/10.1093/esr/jcq038>
- Putnam, M. C., Wig, G. S., Grafton, S. T., Kelley, W. M., & Gazzaniga, M. S. (2008). Structural organization of the corpus callosum predicts the extent and impact of cortical activity in the non-dominant hemisphere. *Journal of Neuroscience*, 28 (11), 2912–2918. <https://doi.org/10.1523/jneurosci.2295-07.2008>
- Ruytjens, L., Albers, F., van Dijk, P., Wit, H., & Willemsen, A. (2007). Activation in primary auditory cortex during silent lipreading is determined by sex. *Audiology and Neurootology*,12 (6), 371– 377. <https://doi.org/10.1159/000106480>
- Shah, S.R & Udgaonkar,U.S.(2018). Influence of gender and age of teachers on teaching: students perspective, *International Journal of Current Microbiology and Applied Sciences*,7 (1), 2436- 2441. <http://dx.doi.org/10.20546/ijcmas.2018.701.293>
- Singer, E. (1996). Espoused teaching paradigms of college faculty. *Research in Higher Education*, 37 (6), 659 – 679. <https://doi.org/10.1007/BF01792951>
- Spilt, J. L., Koomen, H. M. Y. & S. Jak. (2012). Are boys better off with male and girls with female teachers? A multilevel investigation of measurement invariance and gender match in teacher- student relationship quality. *Journal of School Psychology*, 50 (3), 363 – 78. <http://dx.doi.org/10.1016/j.jsp.2011.12.002>

- Warwick, D. P. & Jatoi, H. (1994). Teacher gender and student achievement in Pakistan. *Comparative Education Review*, 38 (3), 377–99. <https://www.jstor.org/stable/1189067>
- Winters, M. A., Haight, R. C., Swaim, T. T., & Pickering, K. A. (2013). The effect of same-gender teacher assignment on student achievement in the elementary and secondary grades: evidence from panel data. *Economics of Education Review* 34, 69–75. <https://doi.org/10.1016/j.econedurev.2013.01.007>
- Zaidel, D., & Sperry, R. W. (1974). Memory impairment after commissurotomy in man. *Brain*, 97(2), 263-272. <https://doi.org/10.1093/brain/97.1.263>