



GUIDANCE SERVICES AS CORRELATE OF PRIMARY FOUR PUPILS' SELF EFFICACY IN MATHEMATICS IN CALABAR MUNICIPALITY OF CROSS RIVER STATE, NIGERIA

ANNE NDIDI MEREMIKWU, EKPENYONG EFFIONG IBOK, LOVINA IDOKO INAH, ADIE EMMANUEL BENIMPUYE, OKRI JOHN ARIKPO AND COLLINS SUNDAY ETURA

(Received 7, November 2023; Revision Accepted 20, November 2023)

ABSTRACT

This study adopted correlational survey design where it determined guidance services as correlate of primary four pupils' self-efficacy in mathematics. This study answered two research questions and tested two null hypotheses. A sample of 600 primary four pupils' was selected from public primary schools using the simple random sampling technique. An instrument titled "Guidance services and self-efficacy in Mathematics Questionnaire (GSSEMQ) was used for data collection. The reliability of the questionnaire established using Cronbach Alpha with a coefficient of .85 and .88. The hypotheses were tested using Pearson Product Moment correlation Coefficient at .05 level of significance. Findings of the study reveal that appraisal and information guidance services significantly relate with pupils' self-efficacy in Mathematics. Based on the findings of this study. It is therefore recommended amongst others that appraisal and information guidance programmes should be embedded in the primary school curriculum in order to increase pupils' self-efficacy in Mathematics.

KEYWORDS: Appraisal, Guidance services, Information, Self-efficacy in Mathematics

INTRODUCTION

Every individual needs the knowledge of Mathematics to function intelligently and efficiently because the subject is an integral part of the human life.

There is virtually no discipline one can think of which does not require Mathematics or have inputs from Mathematics. Mathematics is a systematic way of thinking that is necessary to overcome many of the problems one encounters in daily life (Masitoh & Fitriyani, 2018).

Anne Ndidi Meremikwu, Department of Science Education, Faculty of Vocational and Science Education, University of Calabar, Calabar, Nigeria

Ekpenyong Effiong Ibok, Department of Science Education, Faculty of Vocational and Science Education, University of Calabar, Calabar, Nigeria

Lovina Idoko Inah, Department of Science Education, Faculty of Vocational and Science Education, University of Calabar, Calabar, Nigeria

Adie Emmanuel Benimpuye Department of Science Education, Faculty of Vocational and Science Education, University of Calabar, Calabar, Nigeria,

Okri John Arikpo, Department of Science Education, Faculty of Vocational and Science Education, University of Calabar, Calabar, Nigeria

Collins Sunday Etura, Department of Science Education, Faculty of Vocational and Science Education, University of Calabar, Calabar, Nigeria

On a general note, Mathematics plays a very significant role in the life of everyone in the society. In spite of this wide range of applicability, relevance and usefulness of Mathematics, it is disheartening to note that several emotional factors including self-efficacy, adversely influence students' mathematics achievement (Ibok & Unoh, 2019). Self-efficacy in Mathematics is individual belief, attitude about how well they can perform Mathematics tasks. According to Bandura (2012 & 2018), self-efficacy formed the basis of human behavior which affects the way students' think, feel, motivate, and behave. Self-efficacy is an individual's judgment about his or her ability to perform the given tasks (Chen & Usher, 2013). It determines how much effort individuals put into an activity, how long they will endure when they face obstacles, and how durable they will be in negative situations; it also affects individuals' thinking patterns and emotional responses (Phan, 2012). Individuals' beliefs in their abilities vary across activity domains and situational circumstances rather than manifest uniformly across tasks and contexts as a general characteristic (Lau et al., 2018). In the learning process, when students achieve the desired results as a consequence of their efforts on a task, their confidence in performing similar tasks increases. However, when their efforts do not achieve the expected results, their belief in their ability to perform related tasks decreases (Doménech-Betoret et al. (2017). Observing a successful performance can increase observers' self-efficacy beliefs, whereas observing failures can decrease performance (Schunk & DiBenedetto, 2020). For example, watching a similar classmate succeed in a challenging mathematics problem can motivate other students to overcome similar problems (Lau et al., 2018). Pupils' with high self-efficacy are quick to engage in behavioral activities (e.g., using efficient approaches to learning) that enhance their successful execution of the presented tasks. According to Walson (2015), students with higher self-efficacy are more successful in Mathematics because they can perform better cognitively, have more motivation to continue in the face of difficulties, have less mathematics anxiety, and are more

likely to study Mathematics. Positive experiences with mathematics increase Mathematics self-efficacy while negative experiences decrease Mathematics self-efficacy in pupils. Also high self-efficacy increases motivation for learning mathematics, individuals with low Mathematics self-efficacy may tend to avoid Mathematical tasks (Doménech-Betoret et al, 2017) It has been observed that many students developed low Mathematics self-efficacy which have led to them performing poorly in Mathematics task. Most of them lack the right attitude, belief to study and do not have the right guidance and counseling from home, school and even the society. Guidance services play a significant role in helping students in understanding the rationale for their behaviour, attitude, belief and provides basis for prediction and assistance. According to Meremikwu, et-al (2022), guidance is design to help each pupil adjust to his environment, develop the ability to set realistic goals for himself, realize his potentials in obtaining these goals, integrate this new experience with his concept of self and improve the total educational program. Owusu, Dramanu, Nyarko and Opoku-Amankwa (2018) stated that guidance is a developmental process whereby an individual is helped to appreciate, accept and practice his/her abilities, skills and interests and attitudinal patterns relating to his/her aspirations. In educational settings, guidance comprises of those experiences that help each student to understand and accept him/herself, and effectually live in his/her society. In agreement, Crowe, et al (2022) viewed guidance as what competent counsellors do to an individual or a group of students in the form of assistance that directs the progression in life, develop a point of view, decision-making and be better adjusted. Although the governments have recruited guidance counsellors into all the primary schools to guide and counsel students in schools, most of the pupils in primary schools are left unguided, as such are prone to making unwise decisions, belief in their studies and thereby exposed to failure in life . In line with current education policies where emphasis is on developing twenty-first century skills and competences among students, there is need for comprehensive guidance and

counselling programmes which are critical to help prepare pupils to meet the challenges of the future (Singh, 2018). The guidance services consider in this study that related to pupils' self-efficacy in Mathematics are appraisal guidance services and information guidance services.

An appraisal guidance services involves gathering, organizing and interpreting information or data about the student for the purpose of understanding himself. When students understand himself, he can make reasonable choice from different alternatives at his disposal. Erford (2011) identified guidance services as students' appraisal service which involves the use of tests and non-test instruments to collect, analyze and interpret data on students in order to understand them better. Brown (2013) defines appraisal as self-assessment which is 'an evaluative and descriptive task done by the student regarding his or her own work and academic capabilities'. Correspondingly, Castillo and Cohen (2020) describe appraisal guidance services as a 'various techniques and mechanisms which enable students to describe (i.e. assess) and conceivably allocate merit or worth to (i.e. evaluate) the potentials of their own educational processes and achievements'. In this vein, appraisal of self-efficacy is the way a student assesses their performance and achievement in the learning environment. Filippou (2019) in his studies found that there is a correlation between appraisal services and their students' self-efficacy. Falco, Summer, and Bauman, (2010) investigated the effects of a middle school counseling intervention, using a specially designed curriculum, on participating students' attitudes, self-efficacy, and performance in mathematics and found that guidance services significantly increase students' self-efficacy in Mathematics.

Appraisal guidance services helps students in the development of effective study habits and also assisting them to have right mind-set and interests which will increase positive self-efficacy in learning Mathematics. Kandil and Işiksal-Bostan, (2019) stated that appraisal guidance services proved effective in enhancing students' self-efficacy on mathematics tasks. In a similar manner, Bonne and Johnston (2016) found that guidance services as intervention method enhanced mathematics self-

efficacy. Pioquinto, (2020) examined the effectiveness of solution-focused brief counseling on the self-efficacy and found that guidance services significantly relate to students' self-efficacy. Corpuz, Delos Reyes, and Villamor, (2018) examined the effect of a career counseling program on the self-efficacy of senior high school students and found a significant influence of appraisal guidance services on self-efficacy. In the study conducted in Tanzania by Eliamani, Richard, and Baguma (2013) on access to guidance services and its influence on students' school life and indiscipline it was found that guidance and counselling services had a significant impact on students' school life as well as self-efficacy. Akinlolu, and Chukwudi, (2019) carried out a study on counselling self-efficacy and professional commitment: the mediating role of emotional intelligence and gender identification and found a significant influence of appraisal counselling services on students abilities and beliefs.

Information service is one of the guidance services which is tailored towards equipping students with the necessary information in the areas of educational, vocational and personal social counselling. According to Huang and Mayer, (2018), information services are designed to provide students with a greater knowledge of educational, vocational and personal-social opportunities so that they are able to make better informed choices and decision in their academic pursuit. This service is expected to furnish information on the student's educational needs. Ümmet, (2017) examined structural relationships among counselling self-efficacy, general self-efficacy and positive-negative affect in psychological counsellor candidates and found information guidance and counselling significantly influenced students ability and self-efficacy. Similarly, Lewandowski (2019) carried out a study on predictability of supervisor characteristics and counselor anxiety on pre-Licensed counselors' self-efficacy and found that guidance and counseling significantly influence students' self-efficacy. Owusu, Dramanu, Nyarko and Opoku-Amankwa (2018) examined the assessment of guidance services in senior high schools in Upper Denkyira East Municipality and found information guidance services significantly relate to self-

efficacy. Ruttoh (2015) examined planning and implementation of guidance and counseling activities in secondary schools and found counseling services to significantly influence students' belief, attitude and self-efficacy in schools. Yusof, et al (2017) examined the effectiveness of guidance and counseling services in enhancing students' adjustment to the school academic environment in public boarding secondary schools in Kenya. The result showed that information guidance and counselling services significantly influence self-efficacy. Doğan, and Totan, (2015) stated that effective guidance and counseling services resolve academic stress, emotional and related personal problems.

Research questions

This study answered the following research questions:

- i) To what extent does appraisal guidance services relate with pupils' self-efficacy in Mathematics?
- ii) To what extent does information guidance services relate with pupils' self-efficacy in Mathematics?

Hypotheses

The following null hypotheses were tested at 0.05 significant level, to guide the study:

Ho₁: Appraisal guidance services does not significantly relate with pupils' self-efficacy in Mathematics.

Ho₂: Information guidance services does not significantly relate with pupils' self-efficacy in Mathematics.

Research methods

The study was carry out in Calabar Municipal of Cross River State, Nigeria. The research design used for this study was the correlational survey design. The researchers used this design in attempt to understand the kinds of naturally occurring of variables (guidance services) as it relates to pupils' self-efficacy. The population for the study consisted of all the 5225 primary four pupils in 23 approved public primary schools in Calabar Municipality of Cross River State. The sampling techniques adopted for this study were simple random sampling techniques. This

technique was considered appropriate because every learner of the twenty-three (23) primary schools had an equal chance of being selected for the study. To select the schools for the study, the researcher using the hat and draw techniques in selecting 10 public primary schools out of 23 schools where all the twenty three (23) schools in the study areas were written on a piece of paper, squeezed and shuffled in a hat. The researcher closed his eyes and picked any one school from the hat without replacement until he picked 10 schools representing 43.5% of the entire 23 schools in the study area.

From the ten selected schools, the researchers again adopted the hat and draw method of sampling where "Yes" and "No" were written on pieces of paper and learners were asked to pick. The basket was shaken together with the paper balls and each pupil was asked to choose without replacement. Those who picked the paper balls with "Yes" tags were given a copy of the questionnaire to fill. A sample of 600 primary four pupils were selected representing 11.5% of the entire population of primary four pupils in the study area. The instrument used for data collection was the questionnaire titled "Guidance services and self-efficacy in Mathematics Questionnaire (GSSEM-Q)". The questionnaire contained two sections. Section A was designed to elicit information from respondents' demographic variables such as the name of the school, gender and age while section B is an 18 item four points Likert type scale designed to measure the sub-variables of the study. Each item required the respondent to indicate the frequency of his or her various opinions under strongly agree, agree, disagree and strongly disagree. The two kinds of validation established for the instrument of the study were face and content validity. The face and content validity were established by using three (3) experts in Test, Measurement and Evaluation; in the faculty of Education, University of Calabar. The expert certified that the instrument was face and content valid and could be used for the study. Reliability was established through Cronbach alpha reliability of the instrument (questionnaire), a trial testing was done using forty (40) pupils with Cronbach alpha reliability was conducted and the internal consistency of .85 to .88 showed that the research instrument was reliable. The

hypotheses formulated to guide the study were appropriately tested using Pearson Product Moment Correlation Coefficient.

Presentation of results

The result of the analysis is presented in Tables 1 and 2. The hypotheses were tested at .05 significant level.

Ho₁: Appraisal guidance services does not significantly relate with pupils' self-efficacy in Mathematics

The independent variable in this hypothesis is appraisal guidance services while the dependent variable is pupils' self-efficacy in Mathematics . In testing this hypothesis, mean, standard deviation of appraisal guidance services and pupils' self-efficacy in Mathematics were computed, compared and correlate using Pearson Product Moment Correction . The results are presented on Table 1.

Table 1: Person Product Moment Correlation of the relationship between appraisal guidance services and pupils self-efficacy in Mathematics (N= 600)

| Variables | N | Mean | SD | r-value | p-value |
|------------------------------|-----|--------|-------|---------|---------|
| Appraisal guidance services | 600 | 13.675 | 2.672 | .675 | .000 |
| Self-efficacy in Mathematics | 600 | 20.564 | 3.371 | | |

*Significant at the .05 level, df =598

The result presented on Table 1 shows that appraisal guidance services significantly relate with pupils' self-efficacy in Mathematics ($r=.675$; $p=.000$). With this result, the null hypothesis was rejected while the alternative was retained at the 0.05 level of significance. The positive r-value indicated that the more appraisal guidance services, the higher pupils' self-efficacy in Mathematics tend to be. On the other hand, when there is no proper or no appraisal guidance services, the decreases in pupils' self-efficacy in Mathematics tend to be.

Ho₂: Information guidance services does not significantly relate with pupils' self-efficacy in Mathematics.

The independent variable in this hypothesis is information guidance services while the dependent variable is pupils' self-efficacy in Mathematics . In testing this hypothesis, mean, standard deviation of information guidance services and pupils' self-efficacy in Mathematics were computed, compared and correlate using Pearson Product Moment Correction . The results are presented on Table 2.

Table 2: Person Product Moment Correlation of the relationship between information guidance services and pupils self-efficacy in Mathematics (N= 600)

| Variables | N | Mean | SD | r-value | p-value |
|-------------------------------|-----|--------|-------|---------|---------|
| Information guidance services | 600 | 12.658 | 2.986 | .702 | .000 |
| Self-efficacy in Mathematics | 600 | 20.564 | 3.371 | | |

*Significant at the .05 level, df =598

The result presented on Table 2 shows that information guidance services significantly relate with pupils' self-efficacy in Mathematics ($r=.702$; $p=.000$). With this result, the null hypothesis was rejected while the alternative was retained at the 0.05 level of significance. The positive r -value indicated that the more information guidance services, the increase in pupils' self-efficacy in Mathematics tend to be. On the other hand, when there is no proper or no information guidance services, the decreases in pupils' self-efficacy in Mathematics tend to be.

DISCUSSION OF FINDINGS

The result of hypothesis one revealed that appraisal guidance services significantly relate with pupils' self-efficacy in Mathematics. This is in line with Castillo and Cohen, (2020) who describe appraisal guidance services as a 'various techniques and mechanisms which enable students to describe (i.e. assess) and conceivably allocate merit or worth to (i.e. evaluate) the potentials of their own educational processes and achievements'. The finding is in line with Filippou (2019) who in his found that there is a correlation between appraisal services and their students' self-studies efficacy. Also the finding is in line with the finding of Falco, Summer, and Bauman, (2010) who investigated the effects of a middle school counseling intervention, using a specially designed curriculum, on participating students' attitudes, self-efficacy, and performance in mathematics and found guidance services significantly increase students' self-efficacy in Mathematics. The finding is in consonance with Pioquinto, (2020) who examined the effectiveness of solution-focused brief counseling on the self-efficacy and found guidance services significantly related to students' self-efficacy. Also the finding agreed with Corpuz, Delos Reyes, and Villamor, (2018) who examined the effect of a career counseling program on the self-efficacy of senior high school students and found a significant influence of appraisal guidance services on self-efficacy. The finding is in line with the finding of Akinlolu and Chukwudi (2019) who carried out a study on counselling self-efficacy and professional commitment: the mediating role of emotional

intelligence and gender identification and found a significant influence of appraisal counselling services on students ability and belief.

The result of hypothesis two revealed that information guidance services significantly relate with pupils' self-efficacy in Mathematics. According to Huang and Mayer, (2018), information services are designed to provide students with a greater knowledge of educational, vocational and personal-social opportunities so that they are able to make better informed choices and decision in their academic pursuit. The finding is in line with Ümmet (2017) on structural relationships among counselling self-efficacy, general self-efficacy and positive-negative affect in psychological counsellor candidates which found that information guidance and counselling significantly influenced students' ability and self-efficacy. Similarly, the finding agreed with Lewandowski (2019) who found guidance and counseling significantly influenced students' self-efficacy. The finding agreed with the finding of Owusu, Dramanu, Nyarko and Opoku-Amankwa(2018), and Rutttoh(2015) who found guidance services to significantly influence students' belief, attitude and self-efficacy in schools. The finding agreed with Yusof, et al (2017) who examined the effectiveness of guidance and counseling services in enhancing students' adjustment to the school academic environment in public boarding secondary schools in Kenya and found that information guidance and counselling services significantly influenced self-efficacy in Mathematics.

CONCLUSION

Based on the findings of this study, it is concluded appraisal and information guidance services significantly relate to pupils' self-efficacy in Mathematics. Therefore, appraisal and information guidance services are very important factors and should be supported by educational authorities among other strategies to enhance pupils' self-efficacy in Mathematics.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations were made:

1. Since appraisal and information guidance services positively relate with pupils' self-efficacy

in Mathematics, appraisal and information guidance programmes should be embedded in the primary school curriculum in order to increase pupils' self-efficacy in Mathematics

2. Also, school administrators should solicit the active cooperation of teachers, guidance counsellor, pupils and parents towards improving guidance services as a strategy to enhance pupils' self-efficacy in schools. This would enable them to learn better from the programme and eventually increase their self-efficacy in Mathematics.

REFERENCES

- Akinlolu, A. D., and Chukwudi, A. R., 2019. Counselling self-efficacy and professional commitment: the mediating role of emotional intelligence and gender identification. *International journal of Science Research Publication*. 9(1), 2250–3153.
- Bandura A., 2012. On the functional properties of perceived self-efficacy revisited. *Journal of Management*, 38(1), 9–44.
- Bandura A., 2018. Toward a psychology of human agency: Pathways and reflections. *Perspectives on Psychological Science*, 13(2), 130–136.
- Bonne L., Johnston M., 2016. Students' beliefs about themselves as mathematics learners. *Thinking Skills and Creativity*, 20, 17–28.
- Brown, G.T., 2013. Assessing assessment for learning: Reconsidering the policy and practice. *Making a Difference in Education and Social Policy*. 1,121-137
- Castillo, R., and Cohen, R., 2020. The Impact of Group Counseling on Self-Efficacy among Middle School Students in the United States. *Journal of Child and Family Studies*, 29(10), 2917-2929.
- Chen J. A., Usher E. L., 2013. Profiles of the sources of science self-efficacy. *Learning and Individual Differences*, 24, 11–21.
- Crowe, A., Lamb, R., Harris, J., Crumb, L., and Dietz, S., 2022. The impact of a counseling techniques course on self-efficacy and stigma. *Teaching and Supervision in Counseling*, 4(1). 23-33
- Corpuz, B., Delos Reyes, J., and Villamor, B., 2018. The effect of a career counseling program on the self-efficacy of senior high school students. *Journal of Educational and Psychological Research*, 8(3), 88-96.
- Doğan, T., and Totan, T., 2015. The effect of guidance program on the academic self-efficacy beliefs of female students. *Journal of Education and Practice*, 6(6), 72-76.
- Doménech-Betoret F., Abellán-Roselló L., and Gómez-Artiga A., 2017. Self-efficacy, satisfaction, and academic achievement: The mediator role of students' expectancy-value beliefs. *Frontiers Psychology*, 8(2), Article 1193. <https://doi.org/10.3389/fpsyg.2017.01193>
- Eliamani, M. P., Richard, L. M., and Baguma, P., 2013. Access to Guidance and Counseling Services and Its Influence on Students' School Life and Career Choice. *International School Journal*, 1, 7-15.
- Erford, B. T., 2011. *Transforming the School Counseling Profession*. Upper Saddle River, NJ: Prentice Hall.
- Falco, L. D., Summers, J. J., and Bauman, S., 2010. Encouraging mathematics participation through improved self-efficacy: a school counseling outcomes study. *Educational Research Evaluation*, 16, 529–549.

- Federal Republic of Nigeria, FRN, 2014. National Policy on Education. Lagos: NERDC Press.
- Filippou, K., 2019. Students' academic self-efficacy in International Master's Degree Programs in Finnish Universities. *International Journal of Teaching and Learning in Higher Education.*, 31(1):86-95
- Huang, X., and Mayer, R. E., 2018. Adding self-efficacy features to an online statistics lesson. *Journal of Educational Computer Resources.* 57, 1003–1037.
- Ibok, E. E. and Unoh, E. O., 2019. Students' perception of teachers' evaluation technique and teacher-student relationship and their academic achievement in algebraic processes in Uyo Education Zone of Akwa Ibom, Nigeria. *Interdisciplinary Journal of Science Education (IJ-SED)*, 1(1), 120-132.
- Kandil, S., and İşiksal-Bostan, M., 2019. Effect of inquiry-based instruction enriched with origami activities on achievement, and self-efficacy in geometry. *Int. J. Math. Educ. Sci. Technol.* 50, 557–576.
- Lau C., Kitsantas A., Miller A. D., Rodgers E. B. D., 2018. Perceived responsibility for learning, self-efficacy, and sources of self-efficacy in mathematics: A study of international baccalaureate primary years programme students. *Social Psychology of Education*, 21(3), 603–620s.
- Lewandowski, K., 2019. Predictability of supervisor characteristics and counselor anxiety on Pre-Licensed Counselors' Self-Efficacy. Ph.D. thesis. Minneapolis, MN: Capella University
- Masitoh L. F., Fitriyani H., 2018. Improving students' mathematics self-efficacy through problem based learning. *Malikussaleh Journal of Mathematics Learning*, 1(1), 26–30.
- Meremikwu, A. N., Ibok, E. E., Adie, E. B., Inah I. I.4, Tawo, C. N., and Okri J. A., 2022.. Guidance Services as Predictors of Students' Academic Achievement in Mathematics in Eke Education Zone Akwa Ibom State, Nigeria. *International Journal of Research and Innovation in Applied Science (IJRIAS)*, 7(10), 50-54
- Owusu F, Dramanu BY, Nyarko PA, and Opoku-Amankwa K., 2018. Assessment of guidance services in senior high schools in Upper Denkyira East Municipality. *British Journal of Education*, 6(5):68-83
- Phan H. P., 2012. Relations between informational sources, self-efficacy and academic achievement: A developmental approach. *Educational Psychology*, 32(1), 81–105.
- Pioquinto, L. C., 2020. Effectiveness of solution-focused brief counseling on the self-efficacy of grade 10 filipino students. *Journal of Evidence-Informed Social Work*, 17(2), 175-189.
- Ruttoh M. J., 2015. Planning and implementation of guidance and counseling activities in secondary schools: A case of Kamariny Division of Keiyo District, Kenya. *Journal of Education and Practice*, 6(5):1-4
- Schunk D. H., DiBenedetto M. K., 2020. Motivation and social cognitive theory. *Contemporary Educational Psychology*, 60, Article 101832. <https://doi.org/10.1016/j.cedpsych.2019.101832>

- Singh G., 2018. Educational guidance and counselling concept and its development strategies. *Bodhi International Journal of Research in Humanities, Arts and Science.*;2(3):46-52
- Talsma K., Schuz B., Schwarzer R., Norris K., 2018. I believe, therefore I achieve (and vice versa): A meta-analytic cross-lagged panel analysis of self-efficacy and academic performance. *Learning and Individual Differences*, 61, 136–150.
- Tossavainen T., Rensaa R. J., Johansson M., 2021. Swedish first-year engineering students' views of mathematics, self-efficacy and motivation and their effect on task performance. *International Journal of Mathematical Education in Science and Technology*, 52, 23–38.
- Ümmet, D., 2017. Structural relationships among counselling self-efficacy, general self-efficacy and positive-negative affect in psychological counsellor candidates. *Education Science Theory Practical*. 17, 1875–1892.
- Watson K. L., 2015. Examining the effects of college algebra on students' mathematical dispositions. An unpublished M.Ed theses, Brigham Young University.
- Yusof R, Ishak D.N. M, Salleh D.A.M, Zahidi, A.M, and Bakar AYA., 2017. Counselling self-efficacy (CSE) among Malaysian school counsellors. *Malaysian Online Journal of Counselling*.3(2), 73-86