

**INTERNATIONAL JOURNAL OF
PEDAGOGY, POLICY AND ICT
IN EDUCATION**

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For further information, please consult our *call for papers* at the end of the Journal.

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EDITORIAL

This 9th volume is the second issue since the corona virus pandemic began. We extend a very warm welcome to our authors and readers. The pandemic rages on and researchers round the globe are doing various investigations related to it. We made a call for papers in 2019 and published in June 2020. Right after that, we made another call in August 2020. We are just lucky to maintain our minimum target of one publication per year (12-month intervals). We are grateful that God is helping us to hang in there.

Our call for papers for the current issue (Volume 9) had the theme, *the Global impact of The Corona Virus Disease on Education*.

Once again, our first article of Volume 9 is written by Inaku Egere, who responded specifically to our call for papers on the corona virus. Egere investigated mobile-learning (M-Learning) of undergraduate students in private universities in Nigeria during the COVID-19 pandemic lockdown. According to him, COVID-19 protocols caused a paradigm shift of pedagogy. To evaluate students' performance based on the shift of the learning pedagogy from face to face (F2F) to m-learning, a non-experimental quantitative design was used. A questionnaire was used to gather data from undergraduate students of the Faculty of Education, Veritas University Abuja and the Faculty of Arts and Social Sciences, Catholic Institute of West Africa Port Harcourt, Nigeria. The sample of 233 was derived from a total population of 560 students. Data analysis revealed that, m-learning improved students' performance. To get even better results the study recommended the embellishment of ICT hubs with e-learning facilities throughout Nigeria.

The second article of Volume 9 was authored by Abdulai and Diedong, who examined service quality and customer satisfaction of Mobile Telecom services in Tamale Metropolis in Northern Ghana. The study employed a mixed method research design. The sample size for the study was 401 respondents. Data was sourced from key informant interviews, questionnaires and focus group discussions. The results showed that customers perceived service quality and satisfaction differently. While most Vodafone customers were satisfied with their service, customers of MTN were dissatisfied. The study concluded that some aspects of the operations of both MTN and Vodafone networks require improvement. Service providers need to improve service quality.

The third and final article of the ICT section was conducted by George.

George, Rahman and Ofori believe that since the development of digital media technology, students have embraced the use of Information and Communication Technology (ICT) creativity. However, most of the students have challenges in the use of ICT and this has a negative impact on the pedagogy of creativity in education. To address this issue George sets out to investigate the challenges of using ICT in the creative process. This qualitative approach, a purposive sampling method used a sample of 150 students from the Communication Design Programme. The Statistical Package for Social Sciences (SPSS) was used to analyze the data. The results indicated that most of students lacked competence in using ICT on creativity. It is recommended that students are taught how to develop new concepts and ideas for creativity.

In the Pedagogy subsection, Nabie investigated the interactions of Circuit Supervisors (CSs) with basic school teachers in Ghana. The objective of these interactions was to facilitate the effective teaching of mathematics. The participants of the study were 55 basic school teachers (43

males 21 females). A 20-item anonymous questionnaire was used to gather data regarding CSs activities in the schools of participants. The data were descriptively analysed. The results showed that the feedback provided by CSs, which was intended to support instructional delivery was “at variance with mathematics teacher needs for effective practice and contrary to curriculum recommendations.” The researcher suggested a qualitative study involving the CSs to generate further data to analyse with a view to address the challenge of effective mathematics instruction at basic schools in Ghana.

Adiyiah, Dieudonne and Ameyaw investigated the effect of teachers’ self-efficacy on students’ performance. They asserted that lately, data on Senior High students’ Biology performance had been on serious decline nationwide. They therefore set out to examine the effect of teachers’ self-efficacy on students’ motivation and performance in biology. Six teachers and one hundred and twenty students from two Senior High schools in the Ashanti Mampong municipality of Ghana were the participants. The data collection involved the use of three instruments namely teacher self-efficacy questionnaire, students’ motivation questionnaire and photosynthesis achievement test items. The results were analysed using Pearson product-moment correlation and one-way ANOVA. The findings revealed that teacher’s self-efficacy motivated students and resulted in better academic performance in biology.

These authors conducted a quasi-experimental study using concept mapping and its closeness indices assessment scheme as an alternative learning and assessment strategy. This was necessitated by prevailing inefficient rote learning technique, which could not help students to understand concepts and perform well in biology. A sample of students in the Ashanti Region of Ghana participated in the study. Data collection involved the use of an interactive 5-Es constructivist instructional model delivery, regularly using closeness indices scores and students’

performance test scores in photosynthesis. Analysis was done via one-way Anova statistical tool of SPSS version 21 software. The findings indicated that regular use of closeness indices assessment strategy positively influenced students learning outcomes. Specifically, it promoted their critical thinking and enhanced their conceptual understanding, which resulted in improved academic performance in photosynthesis among participating students of different abilities.

African Studies is the final section of IJOPPIE Vol 9. Dseagu's article on folktales starts the section. Dseagu's paper takes exception to Bascom's (1965) definition of African folktales as fiction that is not taken seriously in traditional societies in contrast to legends and myths. The paper adduces evidence to support the assertion that Bascom's (1965) view of African folktales is "unsustainable". It further asserts that Bascom's definition of folktales had been "discredited long ago". The paper therefore calls on African educators to discard Bascom's (1965) "fallacious" views on African folktales.

Next, under African Studies is Zuure's article on legal systems.

The study examined similarities and differences between the traditional court in Kongo and the modern state-court operating in the area. Additionally, the study explored the prospects of the traditional court in conflict resolution. This qualitative study used the case study design. Sixteen participants were purposively and conveniently sampled and interviewed for data. The findings revealed that the Kongo traditional court and the modern state court had similarities and differences in their approach to conflict resolution. It was also revealed that the Kongo indigenous mechanism to conflict resolution had great prospects. It was therefore, recommended that the two court systems in the area should collaborate for more effective conflict resolution, leading to a more peaceful and harmonious life.

In the third article under African Studies, Zuuri examined the influence of Livelihood Empowerment Against Poverty (LEAP) on household food consumption, access to health services, and children's school attendance of persons with disabilities in the Effutu Municipality in the Central Region of Ghana. The study adopted the qualitative research approach. A sample of thirty-four persons was purposively and conveniently selected to participate in the study. A semi-structured interview guide was used to gather data. The findings revealed that the LEAP programme had a positive influence on household food consumption, access to healthcare, and children's school attendance among PWD beneficiaries in the Effutu Municipality. Zuuri recommended that the programme be regularly reviewed to ensure that it achieves its goals.

Editor – in – Chief

September, 2021

**EFFECT OF TEACHERS' SELF-EFFICACY ON MOTIVATION AND PERFORMANCE
AMONG SELECTED SENIOR HIGH SCHOOL BIOLOGY STUDENTS IN ASHANTI
MAMPONG MUNICIPALITY OF GHANA**

By

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ABSTRACT

The effect of teachers' self-efficacy on students' performance in all fields of educational instruction has been a major concern and of particular interest to many researchers worldwide. Lately, data on Senior High students' Biology performance has been on serious decline nationwide. The purpose of this study was to examine the effect of teachers' self-efficacy on students' motivation and performance in biology. Six Senior High biology teachers and one

hundred and twenty students from Amaniapong and St. Joseph Seminary Senior High schools in the Ashanti Mampong municipality of Ghana were used for the study. The data collection involved the use of three instruments namely teacher self-efficacy questionnaire, students' motivation questionnaire and photosynthesis achievement test items. The results were analysed using Pearson product-moment correlation and one-way ANOVA. The findings of the study revealed that teacher's self-efficacy has a strong and positive influence on students' motivation and enhances academic performance in biology. The results of this study with their educational implications as well as appropriate recommendations for further research studies are provided and discussed.

Keywords: Academic motivation, self-efficacy, academic performance and individualized instruction. Concept of self-efficacy on students' motivation and performance in learning

The significance and the concept of self-efficacy in learning and teaching continue to inspire academic scholars (Adiyiah, Mutangana & Ameyaw, 2020) and research practitioners alike. Many research studies have provided empirical evidence in support of its effectiveness on students' performance and their personal self-efficacy development in learning. It has been explained that, the level at which teachers believe that they can affect their students' learning outcome in educational contexts (Tschannen-moran & Hoy, 2001) for promoting participation and success in science learning is a hallmark towards science education development (Adiyiah, Mutangana & Ameyaw, 2020). Research studies have again emphasized that teacher self-efficacy has been connected with teacher planned effort and persistence in enduring and managing student difficulties (Podell & Soodack, 1993). The concept of self-efficacy beliefs and academic performance as well as participation in science learning (Goldberg & Cornell, 1998; Ross, 1992) has been very interdependent factors that have been discussed in many studies (Adiyiah, Mutangana & Ameyaw, 2020; Tschannen-moran & Hoy, 2001). Therefore, teachers' professional commitment to use

appropriate methods in teaching and positive teacher behaviour for implementing effective teacher-designed interventions and strategies to deal with students learning challenges are effective strategies for sustaining science education is needed. Although many research studies (e.g., Ashton & Webb 1986; Muijs & Reynolds, 2001) have shown that teacher self-efficacy has effect on learners' learning interest and performance. Unfortunately, many of such studies have failed to effectively examine the relationship between teachers' self-efficacy on student' motivation and academic performance. In addition, not many studies have also investigated the validity of teacher self-efficacy across groups of teachers in different schools and settings.

Again, many research studies on teacher self-efficacy have largely been traced, supported and conceptualized within Bandura's (1994, 2002) concept of self-efficacy belief theories that have influenced many teachers positively. Teacher self-efficacy has been explained as the extent to which the instructors are confident with their ability to enhance students' learning outcome effectively (Bandura, 1994). According to Bandura, human behaviour is motivated by the interaction of two kinds of expectations: self-efficacy belief and outcome expectancy (Ahmad & Marzieh 2012). The self-efficacy belief refers to peoples' judgments of their capability to undertake and complete successfully a particular task in a specific context. The outcome expectancy on the other hand, deals with the judgments about the likelihood consequences that increase ones performance would result in activity. It has been realized that highly efficacious teachers tend to be more organised, display efficient skills of instruction delivery, explaining and discussing, questioning and providing needed feedback to learners with special challenges, as well as, maintaining learners on appropriate tasks (Adiyiah, Mutangana & Ameyaw, 2020). Whereas less efficacious teachers display a very sheltered than showing humanistic approach to classroom management practices. Again such teachers spend significantly more time in group project as

opposed to a whole group instruction, feel angered, and become threatened by misbehaviour. Also, they experience difficulty in maintaining and controlling students on task (Ahmad & Marzieh, 2012).

Finally, according to Ahmad and Marzieh (2012), teachers that demonstrate high level of self-efficacy are much likely to provide greater opportunities for student engagements and interaction by using a variety of medium of instructions and different instructional models to meet the needs of all ability levels of learners. Research study has also indicated that teachers with high level of self-confidence are more inclined to divide the class of learners into small groups rather than teaching the class as a whole, thereby allowing the opportunity for more assistance and individualized instruction (Tschannen-moran, 2001)

Teacher self-efficacy on students' motivation in learning

According to the findings of Pintrich and Schunk (2003), motivation is “a process for goal-directed activity that is prompted and sustained” (p.5), and the motivational theory of Gardiner (1985) also explains that students are motivated to learn better when they believe that their teachers show a great deal of care about their activities in an instructional environment. Teachers who earnestly care about their students are described as showing democratic interaction styles, developing expectations for student behavior in light of individual difference. These demonstrate a good attitude towards their own work, and provide constructive feedback on their output, and also on students' progress (Ahmad & Marzieh 2012). Moreover, efficient teachers encourage and engage their students for effective understanding. Again, they manage students' misunderstandings in the subject, and they use various multifaceted aids, in order to make the subject more interesting and meaningful (Adiyiah, Mutangana & Ameyaw, 2020). Additionally, they give students opportunities to engage in discussions and conversations, and also provide supporting feedback

rather than scores on performance. Much evidence shows that teachers' affect students' enthusiasm for learning. Also, teachers' sensitivity concerning students' treatment, might affect students' emotions that are related to the objectives (Ahmad & Marzieh, 2012). The relationships between teachers and students also influence classroom learning climate; teachers are responsible for regulating the classroom environment, including controlling and managing classroom discipline, implementation of strategies and methods of learning and interacting with the students in the classroom. According to Wentzel (1998), students' opinions of their positive affinity with their teachers help them to interact effectively during science classroom. It further relates strongly with their pursuit of pro-social classroom goals and helps them to achieve their set learning target, as they collaborate with others and become socially responsible for their own learning. However, these have been found to be more strongly correlated to student interest in school than perceived support from parents and peers (Ahmad & Marzieh, 2012). Professed support from teachers also encourages the pursuit of social responsibility goals, including acting and helping students in pro-social interactions that encourage peer cooperation (Wentzel, 1998) in learning. On the contrary, students whose perception is that the teacher is harsh and cold are found to consistently display poor social behaviour and low social goals as well as performing less satisfactorily academically, in comparison with their peers (Wentzel, 1998). Students care about their relationships with their teachers and respond with greater motivation, engagement and effort when they believe that their teachers really care about them and are supportive (Ahmad & Marzieh, 2012). One way that teachers express these qualities is through their effective instructional engagement with their students in the classroom. These instructional engagement structure concerns the way in which teachers engage student participation in learning, promote intrinsic motivation, and balance adequate challenges with effective developmental skills.

Concept of Teacher self-efficacy and students' academic performance

Many educational research studies have discussed the effects of teacher self-efficacy beliefs on learner's development, performance and success at school activities (Tournalki & Podell, 2005). Teacher's self- efficacy beliefs may influence a student's performance in several ways: teachers with high level of self- efficacy beliefs perform better than teachers with a low sense of self-efficacy in terms of implementing technological innovations in the classroom, using classroom management principles, applying adequate teaching methods, and encouraging students' self-autonomy. Again, teachers with such caliber take up responsibility for students with particular learning challenges, carefully manage classroom problems (Chacon, 2005), and keep on promising students until results are obtained. Ross (1992) investigated the kind of relationship between student achievements and teacher self-efficacy, by observing the interaction assigned to teachers on a sample of 18 grades 7 and 8 history teachers in 36 classes. The findings of the study indicated that students' performance was higher in classroom of teachers who observed effective engagement with their students, and in classrooms of teachers with greater confidence in the effectiveness of instruction. In addition, Tournaki and Podell (2005) gathered data from three hundred students and eighty- four general education teachers in order to examine how the interaction between student and teacher abilities affects teachers' propositions of students' academic and social success. The participants answered one of 32 possible case studies describing a student, where gender, reading achievement, social behavior, and attentiveness were operated experimentally, and to a 16-item teacher-efficacy scale. Their findings showed that teachers with high level of self-efficacy made fewer negative extrapolations about students, and seemed to modify their predictions when student abilities changed, while low level self-efficacy teachers seemed to be concentrating attention to a single feature when making their predictions. The importance of

science practical instructions on examining the effect of teacher self-efficacy on students' performance and motivation in the classroom has been less emphasized. This provides an appropriate gap in literature for more research studies in this area.

Therefore, this study seeks to find out whether there is any significant relationship between teacher self- efficacy and student' motivation development, and secondly, if there is any difference in students' academic performance based on their teachers' level of self-efficacy development.

To effectively measure and examine the above investigations', this study addressed the following research questions:

1. What relationship exists between teacher self-efficacy belief and students' motivation?
2. What are the impacts of effective teacher self-efficacy on the students' academic performance?

POPULATION AND SAMPLING PROCEDURE

The study participants consisted of two different groups: the first group was made up of six permanent science teachers from three Departments (visual arts, home economics and science) in two different schools namely, St. Joseph Seminary Senior High and Amaniapong Senior High Schools in Ashanti Mampong, Ghana. The teachers were both male and female that were readily available and were taken as intact research assistance upon their expressed consensus worry about their students' challenges related to photosynthesis performance. Majority of teachers (four) have Bachelor of Education, Science and the remaining two had Bachelor of Arts, Science with an average teaching experience of 5.5years.

The second group of participants was made up of 130 students in different classes of the

two Senior High schools whose teachers contributed to this study. The teachers were guided on how to fill the self-efficacy questionnaire items and were divided into three groups based on their level of self-efficacy development. The students in these selected classes where the selected teachers teach were made to also complete students' motivation questionnaires and achievement test. The 130 student who participated in the study were the intact classes of the six teachers, six students were excluded in the process of the analysis and further investigation due to their poor ability in completing the questionnaires thoroughly and four other outliers were also removed from the data and deleted from further scrutiny.

INSTRUMENTS

There were three research instruments used in this study; photosynthesis achievement test, teacher self- efficacy and students' motivation questionnaires. The self-efficacy and motivation questionnaire items were adapted and modified from Tschannen-moran & Hoy (2001) and Solmaz (2016) respectively. The self- efficacy questionnaire included 16 items which investigated the teacher's efficiency and competency in instructional delivery (6 items), classroom management practices (5 items), and student engagement (5 items). The self-efficacy and the motivation questionnaires used a 5-point likert scale ranging from one (1) to five (5), and namely 1(strongly disagree), 2(disagree), 3(neutral), 4(agree) and 5(strongly agree) to rank the teachers' level of self-efficacy. The two questionnaires were also piloted to check its reliability and validity to avoid any element of ambiguity and other related challenges in the main study implementation.

Using Cronbach alpha, the reliability estimates of the two questionnaires were calculated to be 0.76 and 0.76 which were reasonably acceptable index of reliability coefficient. The students'

motivation questionnaires consist of four main parts: the first dimension is intrinsic (items 1-8) and the second part focuses on students' extrinsic career (items 9-13), the third dimension seeks information on the extrinsic social (items 14-19), and finally, the amotivation component (items 20-28). The achievement test items were developed by the researcher using the table of specification recommended by Bloom taxonomy of item construction. In order to ensure the validity of the two questionnaires, experts were made to scrutinize them before their field administration. In addition, factor analysis was performed on students' motivation and teachers' self-efficacy questionnaires to identify how the questionnaires' items functioned in their appropriate sub-domains of all higher than 0.13 (Fields, 2013), if they were actually loaded into the four and three components respectively. The overall factorability of the data indicated that factor analysis was appropriate and could result in reliable information.

DATA COLLECTION PROCEDURE

The process of data collection was started in May 2019. Before the administration of the data collection, teachers were given orientation on the techniques of the data collection practises and conditions. They were again given pre-orientation teachers' self-efficacy questionnaires to complete and assigned identification codes to help facilitate matching their data with their respective students classes during the data analysis process.

During the interaction, students were made to complete both motivation questionnaire and achievement test items under the supervision of their respective teachers who volunteered to act as assistant researchers in their respective classes. The students were grouped with the pre-orientation teachers' self-efficacy scores as the basis of the three classifications (low, average and high). Finally, the data collected from the teachers on their self-efficacy and students' motivation and performance scores were analysis using SPSS version 21 software for answering the research

questions post in the study. They were assured that all the data collected from them (both the teachers and students) will be handled anonymously.

RESULTS AND DISCUSSION

The study discussed two research questions; the first research question examines the relationship between teachers’ self-efficacy and students’ motivation and general performance. With this objective, the Pearson product-moment correlation was performed on teachers’ self-efficacy and students’ performance as well as motivation responses. It was again performed on the teachers’ self-efficacy and each dimensions of the students’ motivation responses. Table 1, indicates the relationship between the teachers’ self-efficacy and the students’ performance, in addition to their motivation.

Table 1: The relationship between teachers’ self –efficacy, students’ performance and motivation

		Teachers self- efficacy	Student Performance	Student Motivation
Teachers Self-efficacy	Pearson correlation	1	.69	.68
	Sig. (2-tailed)		.13	.14
	N	6	12	12

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

As shown in Table 1, a significantly positive correlation coefficient exists between teacher self-efficacy and students’ motivation (.68) as well as students’ performance (.69). Therefore, it can be concluded that high teacher’s self-efficacy promotes or enhances students’ motivation and their academic performance.

In Table 2, a significant relationship exists between teacher self-efficacy and the different dimensions of students' motivation i.e., extrinsic motivation- career, extrinsic motivation-social, intrinsic motivation and amotivation.

Table 2: The relationship between teacher self-efficacy and the different dimensions of the students' motivation

		Extrinsic-	Extrinsic-	Amotivation	Intrinsic
Teachers	Pearson correlation	.69	.69	-.55	.68
Self-efficacy	Sig. (2-tailed)	.13	.13	.26	.14
		12	12	12	12

As indicated in Table 2, there is a high significant positive correlation between teacher self-efficacy and the different dimensions of students' motivation. However, for the correlation between teacher self-efficacy and students' motivation the result seems different: the less the efficacy of the teacher, the more negative the motivation of the students.

The second research question of this study was to examine if there existed any significant difference between students' biology performance in relation to their teacher's level of self-efficacy. To effectively discuss the above objective, an inferential statistical analysis was performed using one-way Anova to critically examine, if there exist any significant differences in the students' biology performance in relation to the different groups of the teachers who contributed to this study in order to find out if actually teaching was performed to enable meaningful comparison to be established based on the teachers' level of self-efficacy.

Table 3: One-way Anova on students' biology performance between the groups

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	763.40	2	381.70	17.99	.00
Within Groups	2482.56	117	21.22		
Total	3245.97	119			

The one-way Anova inferential statistics was followed by bonferroni post-hoc tests just to find out exactly where the significant difference among the groups was positioned or located. The results are presented in Tables 3 and 4.

Table 4: Multiple comparison of difference between ability groups

ABILITY LEVEL	ABILITY LEVEL	Mean Difference	Std. Error	Sig.	95% Bound	Confidence Interval Bound
1	2	-.97	.93	.90	-3.24	1.30
	3	-7.37*	1.28	.00	-10.49	-4.28
2	1	.97	.93	.90	-1.30	3.24
	3	-6.41*	1.21	.00	-9.36	-3.47
3	1	7.38*	1.28	.00	4.28	10.49
	2	6.41*	1.21	.00	3.47	9.36

*. The mean difference is significant at the 0.05 level.

From the result in Table 4, group three performed significantly differently and better than both group one (.00) and two (.00). Also students in group two performed better than those in group one (.90) though not significant. Thus, it can be concluded that the mean scores of student

in group two was higher than that of group one, while group three was the highest and most significant.

CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

The study examined the difference and relationship between teacher self-efficacy and students' motivation development. In addition, it investigated the effect of teacher self-efficacy on the students' performance in biology. The Pearson product-moment correlation coefficient was performed in order to investigate whether there was any statistically significant relationship between teacher self-efficacy and students' performance and motivation, as well as the different dimensions of the students' motivation or not. The analyses showed a highly positive correlation between teacher self-efficacy and students' motivation, and that of their academic performance as well. Thus, it can be concluded and explained that there is a connection between teacher self-efficacy and students' motivation as well as their performance in biology. However, the Pearson product-moment correlation further indicated a high positive correlation between teacher self-efficacy and some of the dimensions of the students' motivation i.e., extrinsic-career, extrinsic-social, intrinsic motivation. The degrees of correlation were .69, .69, and .68 for extrinsic-career, extrinsic-social, intrinsic motivation, respectively. However, the results showed a minimum and negative correlation between the teachers' self-efficacy and students' amotivation (-.55). In educational context like Ghana, in which getting a better grade in sciences and biology is an ideal opportunity for the student in order to get befitting job and to succeed in getting tertiary admission is very important. According to the findings of this research, teachers with a higher level of self-efficacy are able to influence and change their students' attitude toward learning biology, and this enables the students to consider in making biology as favourite subject.

In discussing this component of the study in relation to the students' performance, one-way

Anova and post- hoc tests were performed to examine, if there is any significant difference in terms of the students' performance, based on their teachers' level of self-efficacy. The result of the one-way Anova indicated the existence of difference in the students' biology performance in the different groups as being significant (.00). Also the f-value was found to be significant (17.99). This implies that there was a significant difference between the groups based on their biology performance. The result of the post-hoc tests also confirmed that the students' in group three, who had teachers with higher level of self-efficacy, got better scores than those of group two and one. In other words, it can be inferred that the higher the level of teacher self-efficacy, the higher the students' performance. The results of this current study support the findings of the previous researches suggesting a significant correlation between teacher self-efficacy and increased students' academic performance (Ahmad & Marzieh, 2012). Again by influencing teachers' instructional practices, enthusiasm, commitment, and teaching behaviour (Tschannen-moran & Hoy, 2001; Tournaki & Podell, 2005; Wolters & Daugherty, 2007) may go a long way to enhance students' performance. These results are in support and corroborates with Bandura's observations (1994) that teachers who have a strong sense of efficacy about their capabilities can motivate their students, and improve their cognitive development. However, those who have a low sense of efficacy favour a "custodial orientation that relies heavily on negative sanctions to get students to study" (p.11). The results of this study also support Gibson and Dembo (1984) ideas, who maintained and discussed that teachers with a high sense of efficacy, believe that unmotivated students can be taught and nurtured, by giving extra effort and appropriate motivational techniques. In contrast, teachers with a low sense of instruction efficacy think that they can do little if students are poorly motivated. The influence which teachers exert on their students' cognitive and intellectual reasoning and development is severely hampered by non-

supportive influences and interference from the home and the community in which the students live. According to Moran and Hoy (2001) conceptions of teacher self-efficacy are powerfully related to many meaningful educational outcomes, such as teacher persistence, enthusiasm, commitment and instructional behaviour, as well as, student outcomes, such as performance and motivation. The current study adds to our understanding of the motivational beliefs of teachers, and provides support for the use of the teacher self-efficacy scale outside of subject related fields and cultural settings. Thus, we can confidently hypothesize that teacher self-efficacy can influence students' motivation and performance in different settings, and thus, it is not subject or context-bound. It is also important that in any educational environment, schools' management principles should be able to provide clear opportunities and training schedules in order to enhance their teachers' self-efficacy development, and also consequently, for enhancing and improving students' motivation and performance. For young science teachers, who have not had adequate interactions and chances to build successful experience, and for whom, self-efficacy may not be adequately developed, positive modeling and verbal encouragement may be especially important in building their self-efficacy (Tschannen-moran et al. 2007). Additionally, it seems that personal ability testing seems not to be a usual practice, and is, lagging behind in education compared to other disciplines (Ahmad & Marzieh, 2012). For example, in teacher recruitment, personality testing is either totally neglected or abandoned, or there is just a subjective evaluation of applicants' personality. By replicating this study with larger samples and in different contexts, biology and in general science, educationists or researchers can identify the personality characteristics, which better fit for all sciences, especially, biology teaching profession. Therefore, appropriate objectivity personality testing can be implemented as a required measure for their recruitment into teaching profession, as it is common in other professional occupational

departments. All of these implications seem to be applicable if the society and policy makers change their opinions and perceptions towards teaching and education, most importantly science education. The results of this study show a positive correlation between teacher self-efficacy and students' motivation and biology performance. However, much other valuable information remains to be learned about the role of teacher self-efficacy in learning and teaching, especially, the other sciences, mathematics and technology education (STEM). The following ideas and concepts are necessary for further research study based on this study:

1. There should be further studies to examine the effect of teacher self-efficacy on students' self-efficacy in biology.
2. There should be a need for further research study to examine if teacher efficacy beliefs can be moderated or changed as a result of specific administrators' principle and practices.
3. There should be the need of further research study to examine if the level of teacher self-efficacy differs among various categories of teachers based on their duration on the teaching profession.

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Le journal lance un appel à des articles sur le thème :



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Compte tenu du nouvel ordre mondial instauré par COVID-19, le Journal invite à des articles qui traitent de la recherche, de la théorie ou de la pratique en pédagogie, de la politique linguistique et des TIC dans l'éducation, en faisant spécifiquement référence à l'impact de COVID-19 sur l'éducation. L'appel est ouvert du 30 septembre au 31 décembre 2021. Les articles acceptés devraient être publiés au premier trimestre de 2022. Selon la réponse à cet appel, la publication pourrait être plus tôt.

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NB : Les articles qui ne tiennent pas compte de ces exigences préliminaires seraient supprimés, sans que d'autres mesures ne soient prises.

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