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TEACHERS' PROFILE AS PREDICTOR OF TEACHING COMPETENCE AND STUDENTS' ACADEMIC ACHIEVEMENT IN SCIENCE

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ABSTRACT

This study aimed to determine the relationship between the teachers' competence and students' academic achievement in science, as well as investigating the effect of teachers' demographic profile in both dependent variables. The respondents were the total population of science teachers in Davao City National High School with teaching positions I-III. A descriptive-comparative and correlation survey method was utilized. Independent samples t-test, Analysis of Variance (ANOVA), and Pearson-r Correlation were the statistical treatments used in the study. The teacher-respondents answered a combined adopted and teacher-made survey questionnaire in gathering the data. Findings of the study showed that most of the science teachers are female having teaching positions I, where teaching experience were mostly less than ten years and majority have more than one ancillary function. Additionally, it revealed that science teachers teaching competence was at integrating level whereas students' academic achievement was very satisfactory. Moreover, result showed that there was no significant difference among teaching competence in terms of their sex, teaching position, and teaching experience excluding the number of their ancillary function that is significantly different. Students' academic achievement was significantly different in terms of teachers' teaching position, teaching experience, and ancillary function excluding sex. Thereby, teaching competence was highly and positively associated with students' academic achievement in science. Findings of the study recommended to establish reasonable guidelines in the distribution of ancillary functions and make best use of school existing programs like School Learning Action Cell (SLAC) to ameliorate teaching competence and students' academic achievement.

KEYWORDS: ***teachers' profile, competence, academic achievement, science teaching, ancillary functions.***

INTRODUCTION

Science education has become a priority across the globe due to it being a driving force of development and a fundamental key in solving issues in the global arena. Besides, the 21st century education demands for the practical use of science rather than collecting facts. In view of, most research in science education focus on the pedagogy in teaching, exploring a wide range of teaching methods and strategies that are mostly found to be effective, improving students' retention and their learning experience in science. However, the idea that there are a lot of interventions and teaching strategies that are renowned to be effective as an output of various research, but a persistent decline in students' academic achievement and poor assessment results are still be observed.

A significant finding of Sakiyo and Badau (2015) and Ugo and Akpoghol (2016) reveals that students' performances in Science, Technology, Engineering, and Mathematics (STEM) subjects were fluctuating. Accordingly, in progressive and competent countries like the USA and some countries in Europe challenges in science education were also evident, where Mullis, Martin, Foy, and Arora (2011) describe the performance of USA learners as significantly below that of Singapore and Chinese Taipei. Subsequently, Programme for International Learner Assessment PISA (2012) reported that more than 20 percent of young Europeans were not attaining basic skills in science subjects.

In Asia, Turkey has taken place at the end of the list in the Program for International Student Assessment (PISA). In the past PISA held in 2012, Turkey was ranked 43 among 65 countries in the field of science achievement (PISA, 2012). Likewise, Jordan has participated in Trends in Mathematics and Science Survey (TIMSS), five rounds of these tests comprising science test for the eighth grade consists of basic sciences, results show a clear decline in the results of Jordanian students, the result is an indicator that should be taken into account to identify the reasons behind this drawback for the purpose of developing the educational process (Yahya & Ayasrah, 2018).

Philippines ranked in the low 70s in the 2018 Programme for International Student Assessment (PISA), a student assessment of 15-year-old learners across 79 countries done by the Organization for Economic Co-operation and Development (OECD), where Filipino students ranked low in

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mathematics and science, with 353 points and 357 points respectively against a 489 OECD average for both categories (Dela Cruz, 2019). Additionally, DepEd's previous records showed a declining achievement level of elementary and high school students based on National Achievement Tests (NAT) results from 2005 to 2010 (Ronda 2011). Results show that the separate survey and tests are comparable, this indicates that Philippines performance in core subjects like science is reliably poor from 2010 to 2018. The survey recommends that interventions should be made to the students of countries, like the Philippines, where the relationship between a student's socio-economic status and academic achievement is strong.

In Davao City National High School, there was an encounter of students' difficulty and poor achievement in science. It was also observed that students' summative tests and quarterly exams are mostly skewed to the average and poor scores despite of the varied strategies given. Thus, the teachers in the school are equipped with enough training and seminars relating to various teaching strategies, amplifying their teaching competence and classroom interaction. This proves that even though training and seminars are given to teachers, the problem of students' academic achievement remains persistent. The breach between countless professional enhancements of teachers and enduring students' low achievement in science interest the researcher. Hereafter, the identified gap directed the researcher to investigate on teachers' demographic profile towards teaching competence, as teacher being a significant predictor of student academic achievement (Topçu, Erbilgin, & Serkan, 2016).

The researchers sought information regarding the following: (a) demographic profile in terms of sex, teaching position, teaching experience, and ancillary function; (b) level of teachers' competence in terms of subject mastery, classroom management, instructional delivery, and assessment; (c) level of students' academic achievement in science in first and second quarter and their average grade; (d) significant difference in teaching competence when analyzed according to their demographic profile; (e) significant difference in the students' academic achievement in science in the first and second quarters and their average grade when analyzed according to their demographic profile; and (f) significant relationship between teachers' competence and students' academic achievement in science.

The findings of the study will be useful to address the drawback of students' poor academic achievement in science, despite of having teachers that are trained to series of renowned effective teaching strategies. Accordingly, the findings of the study can guide the administration to review and improve school policy in promoting effective teachers. This will also be useful in informing teachers regarding the influence of their distinctive characteristics, duties, and concerns towards their teaching competence affecting their students' learning outcomes. Most importantly, students will have a holistic experience in learning, having teachers that are enthused to teach where teaching strategies and interventions will be faithfully implemented.

METHOD

Research Design

The researchers utilized descriptive-comparative and correlation survey given the nature of the research that is quantitative. This method was used in describing the demographic profile of science teachers and the level of their teaching competence, and students' academic achievement in science. Additionally, a comparative research design was used in comparing how science teachers' different demographics affect their teaching competence and their students' academic achievement. Furthermore, correlational study design tests the relationship between two variables without any of them being influenced by the researcher (McCombes, 2019). This method was employed to describe the relationship among the variables such as teaching competence and students' academic achievement in science.

Respondents and Sampling

The respondents of the study were all secondary science teachers at the Davao City National High School in both Junior and Senior High School departments. Specifically, science teachers in the school with teaching positions I-III. The respondents of the study were selected using complete enumeration, where all science teachers both from Junior and Senior High School departments were recruited and measured in the study. Complete enumeration also known as the census is a study of every unit, every one or every thing, in a population, which means a complete count of a whole population (Australian Bureau of Statistics, 2018).

Instruments

The researchers used a survey questionnaire as means of collecting secondary data from the respondents. The questionnaire consists of nine indicators adopted from the Philippine Professional Standards for Teachers (PPST) that have been developed and nationally validated. The indicators were from the DepEd widely used classroom observation tool (COT) developed by the Philippine National Research Center (RCTQ) for teacher quality that is signed into policy by Department of Education through DepEd Order No. 42, s. 2017. The nine indicators in the COT were inserted and used in the survey questionnaire to collect the classroom observation rating of teachers for the first and second quarters and to describe the level of their teaching competence that was rated by their mentors/heads. The nine indicators were group into four domains, indicators 1 and 7 were for subject mastery, indicators 4,5, and 6 were for classroom management, indicators 2, 3, and 8 were for instructional delivery, and indicator 9 for assessment.

The instrument also includes questions for teachers' demographic profile as selected by the researcher to explore and to describe the profiling of the respondents. Sex, teaching position, years of teaching experience, and frequency of ancillary function were the chosen distinct characteristics of teachers being included in the survey questionnaire. A question for consolidated General Scholastic Aptitude (GSA) of teachers

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handled sections in science for the first and second quarters were also included in the survey questionnaire to measure the level of their students' academic achievement in both first and second quarters, and the average grade.

For teaching competence, an adopted rubric from DepEd was utilized. The rubric contains a performance continuum for each career stage. For Teacher I-III (with Levels 3-7) this was based on Philippine Professional Standards for Teachers (PPST) through DepEd Order No. 42, s. 2017. The PPST articulates what constitutes teacher quality through well-defined domains, strands, and indicators that provide measures of professional learning, competent practice, and effective engagement across teachers' career stages. The rubric level summary refers to both the name and description of each level, described according to performance' and teaching competence of teachers in the classroom. For the academic achievement, the respondents' secondary data on the overall mean of students' general scholastic aptitude in science for the first and second quarters were used to measure the level of students' achievement in science.

Statistical Treatment of Data

The researchers used frequency and percentage distribution in getting the descriptive statistics of teachers' profile. Mean was used to determine the descriptive statistics and central tendencies of the scores for the demographic profile of teachers in terms of their sex, teaching position, teaching experience, and ancillary function. The same statistical value was used to determine the level of teachers' teaching competence and students' academic achievement in science. Standard deviation was used to tell how measurements for a group are spread out from the mean or expected value. Independent Samples t-test was used to compare and determine whether there is any statistically significant difference in the means of the variables with two levels. Specifically, teaching competence and students' academic achievement, when respectively analyzed according to the teacher's demographic profile (sex, teaching experience, and ancillary function). One-way Analysis of Variance (ANOVA) was used to compare the means of the variables with more than two levels, specifically, in determining whether there is any statistically significant difference in the means of teaching competence and students' academic achievement when respectively compared according to the teacher's teaching position. Lastly, the researchers utilized Pearson-r correlation
to determine the association between teaching competence and students' academic achievement in science. The testing of a null hypothesis was based at the $\alpha = 0.05$ level of significance using a two-tailed test.

RESULTS AND DISCUSSION

Teachers' Demographic Profile

Table 1
Demographic Profile of Science Teachers

Profile		Frequency	Percentage
Sex			
	Male	13	27.7
	Female	34	72.3
	Total	47	100.0
Teaching Position			
	I	22	46.8
	II	10	21.3
	III	15	31.9
	Total	47	100.0
Teaching Experience			
	<10 Years	25	53.2
	≥10 Years	22	46.8
	Total	47	100.0
Ancillary Function			
	≤1	21	44.7
	>1	26	55.3
	Total	47	100.0

Table 1 shows that 34 out of 47 science teachers are female. They constituted seventy-two and three tenths-percent (72.3%) of the total population. It also shows that the majority (22 or 46.8%) of the respondents' teaching position was teacher I, followed by teachers III (15 or 31.9%), and teachers II (10 or 21.3%) comprising the population of both junior and senior high school science teachers. Further, a minor difference in the distribution of teaching experience was found when group into two, twenty-five (25 or 53.2%) were below ten years of experience; and twenty-two (22 or 46.8%) were above ten years. In the case of teachers' ancillary function, data had shown extreme frequency and were recoded into two groups. Thus, it

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appears that the majority (26 or 55.3%) of the teachers have more than one task apart from teaching.

Level of Teachers' Competence in Teaching Science

The level of teaching competence comprising the four domains (subject mastery, classroom management, instructional delivery, and assessment) and their discrete levels are all presented in Table 2.

Table 2
Level of Teachers' Competence in Science Teaching

	N	Mean	SD	Qualitative Description
Subject Mastery	47	6.57	.382	Integrating
Classroom Management	47	6.49	.543	Integrating
Instructional Delivery	47	6.58	.362	Integrating
Assessment	47	6.68	.409	Integrating
Average	**47**	**6.58**	**.349**	**Integrating**

There were 41 junior high school science teachers and six (6) senior high school in the entire campus with teaching positions I-III as qualified respondents combined to an overall population of N=47. Further, the mean is used to determine the level of respondents teaching competence in science using their two classroom observation ratings. As a result, the overall level of teaching competence is Integrating (*M=6.58, SD=.349*) which is also equivalent to very high. Similarly, all four domains of teaching competence are integrating, and are respectively disclosed as follows: assessment (*M=6.68, SD=.409*) with the highest mean, followed by instructional delivery (*M=6.58, SD=.362*); subject mastery (*M=6.57, SD=.382*); and classroom management (*M=6.49, SD=.543*). The level of teaching competence reveals that science teachers use well-connected pedagogical aspects of the indicator to create an environment that addresses individual and group learning goals. This means that teachers' competence in teaching has been progressing. A study of Kahveci (2010) explains science education reform calls for a pedagogical shift from a teacher-centered, textbook-based instructional paradigm to a student centered, inquiry-based model. Thus, integrating level of respondents teaching competence attests a shift in teaching practices from traditional to contemporary ways of teaching which accentuate the learning-centered approach that is present in the nine indicators. Above all, competent teachers are expected to have adequate knowledge and skills that can manage effective learning to happen. This is supported in the statement that competent teachers have the requisite knowledge and skills to produce desired student learning outcomes (Mulder et al., 2006), and are better able to facilitate an environment conducive to learning (Mulder et al., 2006; Roelofs & Sanders, 2007; Woolfolk Hoy, 2000). However, there are still ratings in the domains of classroom management that is applying (5.17) and consolidating (5.50) for both subject matter and instructional delivery in the minimum score. It reflects that peer coaching, mentorship, and further enhancing activities in pedagogical aspects are still needed and shall be done, enabling teachers to sustain teaching competence.

Level of Students' Academic Achievement in Science

Table 3
Students' Academic Achievement in Science

	N	Mean	SD	Qualitative Description
First	47	86.0574	5.359	Very Satisfactory
Second	47	86.4489	5.272	Very Satisfactory
Average	**47**	**86.2532**	**5.253**	**Very Satisfactory**

Figures in the table had revealed a very satisfactory level in all both quarters and average grade in science. It also shows that there is a minor difference among all given means. The order of students' academic achievement from the highest mean to the next are listed as follows: second quarter (*M=86.4489, SD=5.272*); average (*M=86.2532, SD=5.253*); and first quarter (*M=86.0574, SD=5.359*). In these conditions, it implies that students were able to develop fundamental knowledge and skills and core understanding. It also further entails that students can transfer these learning through authentic performance tasks. Even so, there are General Scholastic Aptitude (GSA) that are of fairly satisfactory that is near to failing academic achievement in the minimum data. These means are 77.03, 77.95, and 77.52 for first, second, and average means, respectively. Thereby, despite of students having a very satisfactory level in science in the research locale, the minimum GSA must also be taken into consideration. These fairly satisfactory data can be an inhibiting constituent in greater improvements of National Achievement Test (NAT) for the past years and can also be one of the potential contributing factors making Philippines ranked low in the previously conducted assessment by Programme for International Student Assessment (PISA) Dela Cruz (2019). Additionally, DepEd's previous records showed a declining achievement level of elementary and

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high school students based on NAT results from 2005 to 2010 (Ronda 2011). Furthermore, the school is providing remediation for students who have challenges with their academic achievements and encourages teachers to maximize the remediating modalities to have at least a minimum satisfactory GSA in the future.

Teaching Competence Analyzed by Teachers' Profile

Reflected in Table 4 are the comparative results of teaching competence when analyzed according to sex, teaching position, teaching experience, and ancillary function as constituents of science teachers' demographic profile. An independent-samples t-test was conducted to compare the teaching competence among 47 science teachers in terms of their sex, teaching experience, and ancillary function. Furthermore, a one-way analysis of variance (ANOVA) was used in comparing the teaching competence according to their teaching position.

Table 4
Teaching Competence Analyzed by Science Teachers' Profile

		N	Mean	SD	t-value	F-value p-value	Interpretation
Sex	Male	13	6.4850	.431	-1.026	.319	Not significant
	Female	34	6.6196	.312			
Teaching Position	I	22	6.4935	.35982	1.801	.177	Not significant
	II	10	6.5830	.40216			
	III	15	6.7122	.27170			
Teaching Experience	<10 Years	25	6.5109	.381	-1.513	.137	Not significant
	≥10 Years	22	6.6635	.297			
Ancillary Function	≤1	21	6.7380	.241	3.100	.003	Significant
	>1	26	6.4566	.376			

The overall comparative result had revealed that teachers' profile is significantly different in terms of their ancillary function whereas, sex, teaching position, and teaching experience had shown no statistically significant difference in the teaching competence of science teachers. Exploring the individual scores of each domain in the teachers' profile are as follows:

Sex. Analogous to the comparative result of the domains in teaching competence, the entire findings suggest that there was no statistically significant difference in the teaching competence of science teachers when compared according to sex for male (*M=6.4850, SD=.431*) and female (*M=6.6196, SD=.312*) conditions; *t(45)=-1.026, p=.319*. It also further posits that sex does not affect the teaching competence of teachers in science classes. Thus, the result did not conform in the studies of Akhmetova, Mynbayeva, and Seitova (2017); Dee (2007); Mahanta (2012); and Winters, Haight, Swaim, and Pickering (2013); findings which asserts that male and female teachers differ significantly in professional competence. Meanwhile, findings corroborated in the studies of Akiri and Ugborugbo (2008); and Akpochafo (2015) who found that there is no significant difference between male and female teachers' competencies.

Teaching position. The statistical result of teaching competence of forty-seven (47) science teachers comprised of teachers I (N=22), teachers II (N=10), and teachers III (N=15) had revealed no statistically significant difference in all domains of teaching competence of teachers when compared according to their teaching positions. Accordingly, the entire result of teaching competence was greater than the p>.05 level for the three conditions [*F(2,44) = 1.801, p = .177*]. Taken together, these results suggest that teaching competence will not significantly vary and be affected by teaching positions. Specifically, it implies that teachers' salary that is directly proportional to their teaching position can be poorly used as an indicator to predict teaching competence. Although pursuant to the R.A. 9155, the selection, promotion, and designation of school heads and teachers shall be based on merit, competence, fitness, and equality, which agrees with DepEd Order No. 66 s. 2007 "Revised Guidelines on the Appointment and Promotion. It further stipulates the ranking for vacancies of Teacher II and Teacher III positions should have at least a very satisfactory performance rating for the last three (3) rating periods prior to his/her application (Llego, 2019).

However, items for promotion are few in proportion to the entire number of teachers, including other sets of qualifications aside from teaching competence. These conditions provide an extrapolation that supports the finding that teaching position can be poorly used as an indicator to predict teaching competence. This has been supported by a study of Subruto (2013) which found that not all indicators of income affect the quality of education that is measured with the students' achievement.

Teaching experience. The overall comparative result among the domains of teaching competence had revealed no statistically significant difference among the teaching competence of science teachers when analyzed according to their teaching experience <10 years (*M=6.511, SD=.381*) and ≥ 10 years (*M=6.664, SD= .297*) conditions; *t(45)=-1.513, p= .137*. These results suggest that years of teaching experience does not completely predict the teaching competence of science teachers. Indeed, teaching experience matters, but more is not

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always, where similar contrasting results showed that the impact of the experience is strongest during the first few years of teaching; after that, marginal returns diminish. The study of Ladd (2008) findings shows that, on average, teachers with more than 20 years of experience are more effective than teachers with no experience but are not much more effective than those with 5 years of experience. The study has also documented some evidence that effectiveness declines after some point, particularly among high school teachers. Evidence suggests that the most experienced (greater than 25 years) high school teachers may be less effective than their less experienced (at least 5 years) counterparts (Ladd 2008) and even their inexperienced colleagues (Harris and Sass 2007). However, the domain classroom management of teaching competence underscores a significant difference among the four domains of teaching competence. It indicates that greater teaching experience improves teachers' classroom management practices. The result agreed in the study of Wolff, van den Bogert, Jarodzka, and Boshuizen (2014) which showed that expert teachers were significantly more effective at predicting classroom management events than novice teachers. This suggests that with years of experience, teachers develop a better understanding of classroom management, which enables them to anticipate issues and to adapt their classroom management.

***Ancillary function*.** In general, the entire comparative result of teaching competence reveals that there was a statistically significant difference in the teaching competence for teachers with ≤1 ancillary function (*M=6.738, SD=.241*) than those with >1 ancillary function (*M=6.457, SD=.376*) conditions; *t(45)=3.100, p= .003*. This implies that teachers with fewer ancillary functions are more competent in teaching than those teachers having more than one ancillary. In the study of Orjiji (2000), it explains that work overload and underload of a job as factors can generate a feeling of hopelessness and may contribute towards lack of motivation, depression, and inefficiency. Moreover, related findings showed psychological strain can lead to negative organizational outcomes like poor performance, health-related problems, and absenteeism (Bakker, Demerouti, & Sanz-Vergel, 2014). Furthermore, findings also suggest considering teachers teaching loads as a basis in the distribution of ancillary functions to avoid work enervation and to enable competent teaching practices.

Students' Academic Achievement in Science Analyzed by Teachers' Demographic Profile

There was no statistically significant difference among the academic achievement of students in science. All periodicals including the average grade was compared accordingly via teachers' sex for male (*M=84.857, SD= 5.316*) and female (*M=86.787, SD= 5.209*) conditions; *t(45)=0.877, p=0.265*, using independent samples t-test. Specifically, it can be connoted in the results that students' learning and attainment of science competencies will not be affected by teachers' sex. It further suggests that the academic achievement of students can be most likely to be affected by teachers' competence in teaching rather than having a male or a female teacher in class.

There was a statistical significant difference in both first and second quarters and average grade of students in science, the given conditions: [*F(2,44) =6.383, p = 0.004*]; [*F(2,44) =6.510, p = 0.003*]; [*F(2,44) =6.648, p = 0.003]*, respectively. Thereby, the researcher is certain that teachers' teaching position significantly influences students learning in science. However, the prior test reveals that teaching competence is not statistically significant with teaching position, but even so, it can be still highlighted that students' achievement can independently be affected by teaching position regardless of teachers' teaching competence.

A one-way ANOVA was employed to relatively assess students' academic achievement by teachers given teaching positions I-III. Consequently, post hoc comparison using the Tukey HSD test indicated a pattern that students handled by teachers I performed significantly lower than those students handled by teachers II and III. Thus, students' academic achievement in all periodicals were all statistically significantly different for teachers I, against teachers II and III which yielded a p-value lesser than the p<0.05 level whereas teachers II and III have shown no statistically significant variation with a greater than p>0.05 level in all periodicals.

Statistical results using independent samples t-test suggests that there was a significant difference among students' academic achievement when compared to teachers teaching experience. Also, it was further elucidated in Table 10 the distinctive inferential value for first quarter [<10 years (*M=84.517, SD=5.414*) and ≥ 10 years (*M=87.802, SD= 4.835*) conditions; *t(45)=-2.185, p= .034*] and second quarter [<10 years (*M=84.816, SD=5.704*) and ≥ 10 years (*M=88.305, SD= 4.114*) conditions*; t(45)=-2.375, p= .022*], including the average grade [<10 years *(M=84.666, SD=5.499*) and ≥ 10 years (*M=88.056, SD= 4.414*) conditions; *t(45)=- 2.309, p= .026*] of both periodicals that are all lesser than the p>0.05 level.

The relative test result using independent samples t-test reveals a statistically significant difference which yielded a p-value lesser than the p<0.05 level in both quarters and average grade. The statistical values are significant in first quarter [≤1 (*M=89.453, SD= 4.246*) and >1 (*M=83.315, SD=4.574*) conditions; *t(45)= 4.721, p= 0.00*] and second quarter [≤1 (*M=90.196, SD= 3.932*) and >1 (*M=83.423, SD=4.179*) conditions; *t(45)= 0.906, p= 0.00*] including the average grade [≤1 (*M=89.824, SD= 4.028*) and >1 (*M=83.369, SD=4.293*) conditions; *t(45)= 0.736, p= 0.00*] of both periodicals in all conditions. Moreover, the result exemplifies that students having teachers with fewer ancillary task have greater academic achievement in science than those students having teachers with more than one ancillary.

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Teaching Competence and Students' Science Academic Achievement

Table 5

Relationship between Teaching Competence and Students' Academic Achievement

		First	Second	Average	Interpretation
Subject Mastery	Pearson Correlation	.552**	.594**	.579**	
	Sig. (2-tailed)	.000	.000	.000	Significant
	N	47	47	47	
Classroom Management	Pearson Correlation	.591**	.658**	.632**	
	Sig. (2-tailed)	.000	.000	.000	Significant
	N	47	47	47	
Instructional Delivery	Pearson Correlation	.625**	.660**	.650**	
	Sig. (2-tailed)	.000	.000	.000	Significant
	N	47	47	47	
Assessment	Pearson Correlation	.406**	.365*	.390**	
	Sig. (2-tailed)	.005	.012	.007	Significant
	N	47	47	47	
Mean	Pearson Correlation	.661**	.696**	.686**	
	Sig. (2-tailed)	.000	.000	.000	Significant
	N	47	47	47	

In general, Table 5 summarizes the entire association of teaching competence and students' academic achievement in science. It reveals that there was a high positive correlation between the two variables in both first (*r=.661, n=47, p= 0.00*) and second (*r=.696, n=47, p= 0.00*) quarters and the average grade (*r=.686, n=47, p= 0.00*) conditions. It further emphasizes that teachers with higher teaching competence increase students' academic achievement in science. Hence, teaching competence is a significant factor behind the students' achievement, and thus highly competent teachers do better than those under low competent teachers. The findings corroborated in the subsequent studies of Banerjee, Das, and Mohanty (2014) found that students' achievement differs significantly in Life Science subjects due to teaching by high or low competent teachers. Consequently, similar studies of Shawi and Sultan (2014), Bilasa (2016), Naz (2016), and Nbina (2012) across different disciplines of education found consistent evidence that teacher competence influences student achievement.

CONCLUSION

Based on the findings of the study, the following conclusions are drawn. First, the science teachers in the research locale were mostly female teachers having teaching positions I, where teaching experience was mostly less than ten years and the majority have more than one ancillary function. Second, the science teachers in the school uses well-connected pedagogical aspects that addresses individual and group learning goals in the classroom. Third, students' academic achievement in science was very satisfactory. Hence, students were able to develop fundamental knowledge and skills and core understanding. Fourth, science teachers with fewer ancillary functions are more competent in teaching than those teachers with more than one ancillary. However, other domains of teachers' demographic profile in terms of sex, teaching position, and teaching experience did not affect teaching competence. Fifth, science teachers' demographic profile in terms of teaching position, teaching experience, and the number of ancillary functions significantly affect students' academic achievement in science. In contrast, teachers' sex does not affect students' academic achievement. Lastly, science teachers with higher teaching competence increase students' academic achievement in science. Hence, teaching competence is a significant factor behind the students' academic achievement, and thus highly competent teachers do better than those under low competent teachers.

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