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Science teachers teaching competence and students' satisfaction

Belinda R. Basas [1]
Eduardo Edu C. Cornillez Jr. [*2]
Mary Ann B. Balagasay[3]
Loreta R. Cinco[4]

Eastern Visayas State University, Tanauan Campus[1,2,3,4]
Tanauan, Leyte, Philippines
belinda.basas@evsu.edu.ph[1]
eduardoedu.cornillez@evsu.edu.ph[2]
maryann.balagasay@evsu.edu.ph[3]
loreta.conco@evsu.edu.ph[4]

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Abstract

Today's educational system has an increasing demand for teachers competent enough to help improve students learning in science. Similarly, students feel the need for teachers who can teach and communicate effectively. When these needs are met, students feel contentment and satisfaction in learning. Hence, the study's purpose was to examine the student's perceived level of competence and the level of satisfaction on the science teaching competence of their science teachers according to commitment, knowledge of the subject matter, application of teaching strategies, and classroom management. Specifically, this aims to determine which of the science teaching competence variables greatly influence the overall satisfaction of students. A random sample of 195 students was identified through a stratified random sampling method from the three public secondary schools. Ordinal regression analysis was utilized to answer the study objectives. The results revealed that students are satisfied with their perceived level of competence in the four areas of science teaching competence. The four science teaching competencies explained a significant amount of variance in student's overall satisfaction with the science teacher competence. However, only the application of teaching strategy out of the four science teaching competence variables showed statistical significance in influencing student's overall satisfaction. Results implied that teachers' application of varied teaching strategies contributes to the overall satisfaction of students towards their teachers' teaching competence. It is recommended that learning institutions should further intensify the conduct of training on their teachers to improve students' satisfaction among the teaching competencies identified.

Keywords: *Classroom management, Commitment, Knowledge of the subject matter, Science teaching competence, Student's satisfaction, Teaching strategies*

Introduction

The Enhanced Basic Education Curriculum (BEC) or K to 12 Program implemented in the Philippines in 2012 has posed several demands in providing quality education, particularly in the science program. Various reforms have been made just to enable learners to become literate participants in providing analytical judgments in all areas of science to meet the challenges of the world (Okeke & Mtyuda, 2017; Mardapi & Herawan, 2018). Among these reforms include the teachers' quality of teaching science. One of the greatest aims of science education which the k to 12 curricula is geared towards is for the students to become life-long learners equipped with essential skills and

competencies applicable in their field of specialization (Kabadayi, 2016). These changes in the country's education curriculum have placed the different stakeholders into different views and perspectives. Students perceived this change as something that would help them become holistically and globally competitive individuals (Ganeb & Montebon, 2018).

Todays' educative process where students' views and participation about learning has become a critical factor in describing the quality of education and determining the kind of education that a learning institution provides (Kane & Staiger, 2012; Wilkins et al., 2012, Wallace et al., 2016). Students' perception based on their experiences plays a significant role in the effectiveness and improvement of the science curriculum. For the reason that there will be no one else who can report the extent to which their experience in the classroom is satisfying and worthwhile. This great emphasis on student satisfaction about education since students at present are now conscious of how they learn and participate in the educative process (Petruzzilis et al., 2006; Jalali et al., 2011; Long et al., 2013) which provides opportunities for them to give their comments and feedback about their experiences (Douglas, Douglas & Barnes, 2006). Moreover, academic institutions have also used satisfaction to determine their strengths enabling them to attract top professors and students in their choices of universities as well as the weak areas which they have to improve (Schreiner, 2009; Walker, 2014, Cornillez, 2019).

It has been said that students feel the need for competent teachers to achieve the demands of the new curriculum. Student's interests and experiences in the educative process can only be addressed by considering the role of teachers in the learning process (Sarwat & Muhammad, 2014). Teachers' play a vital role in ensuring the effectiveness of quality education and social transformation (Okeke & Mtyuda, 2017; Mardapi & Herawan, 2018), and immense consideration has been placed on them since they are not only expected to be competent and effective communicators of knowledge (Mantra, 2017) but also in developing ethical and professional students to ready to face the challenging world (Bell, 2016; Chory & Offstein, 2017). Teachers cannot be considered competent and effective if they do not possess characteristics that will inspire students to become creative problem solvers. Therefore, teachers should equip themselves with the necessary professional abilities and skills to be able to organize, manage, and teach students effectively (Suarman, 2015).

The quality of student learning is fundamentally linked through the effectiveness and ineffectiveness of teachers in the classroom (Avis et al., 2010, Long et al., 2013, Sarwat & Muhammad, 2014). Teaching competence is a buildup of capabilities (Bibi, 2005; Carreker & Boulware, 2015), knowledge, skills, attitudes, (Dantes, 2015) values, beliefs, and experiences necessary for future improvements (Astawa et al., 2017; Maba & Mantra, 2018). Teacher's commitment (Park et al., 2005, Long, et al., 2013, Hussain et al., 2014), knowledge of the subject matter (Katane et al, 2006), the choice and application of strategies in teaching (Schroeder et al., 2007; Akram, 2019) as well as classroom management (Spearman & Watt, 2013; Sarwat & Muhammad, 2014) are only a few of the factors that affect learning.

A teacher's commitment to teaching can be an effective tool to attain academic success (Park et al., 2015). Students are more likely to trust teachers that are committed to their teaching. Students gain developed attitudes towards learning when teachers demonstrate sensitivity in their student's ability to absorb the lessons as well as in involving them in a collaborative process. The teachers' formal and informal interaction with the students may lead to retention or withdrawal of students in the class which may indicate student satisfaction with the quality of education service.

Xiao et al. (2015) reported that the teacher's commitment to the student's academic achievement and social integration is positively associated with student satisfaction. It has been found that effective commitment exists between conscientiousness and job performance (Jamal, 2014; Ahmad et al., 2014) and in evaluations of teaching (Patrick, 2011). Sario (2015) revealed that students at Philippine Normal University are very satisfied with the institution's commitment to excellence and are

satisfied with the instructional effectiveness of the teachers. Darling-Hamond (2000) explained the positive influence of student evaluation and teaching practices both at the faculty and institutional level. It showed that students are highly satisfied with their involvement in the implementation of various practices in teaching. However, students showed that they are least satisfied with the instructions given to them by their instructors. Suarman (2015) found a statistically significant correlation between students' and lecturers' teaching quality and student satisfaction. It revealed that independent variables such as motivation, planning, and lecturer's competency are significantly related to student satisfaction while the course variable did not reveal a significant relationship.

The above literature suggests that while there may have been several studies that pertain to student satisfaction (Butt & Rehman 2010, Long et al, 2013; Xiao et al., 2015) there has been little research conducted that determine the influence of science teaching competence such as commitment, knowledge of the subject matter, application of teaching strategies and classroom management and students' overall satisfaction. It could be that these factors are specifically linked to student satisfaction in previous studies, but have not shown the extent of influence towards the overall satisfaction of students acquired in the teaching and learning process. Therefore, the study investigated the extent of influence of the science teaching competence variables such as commitment, knowledge of the subject matter, the use of teaching strategies, and classroom management to the overall satisfaction of the students. The findings of this study will guide teachers to find areas of teaching and learning that are needed for improvement and intervention in the delivery of the lessons specifically in a science class.

Objectives of the study

This study investigated the extent of influence of the science teacher's teaching competence on the overall student's satisfaction with science teaching competence. Specifically, the following questions were answered.

1. To determine the extent of the science teachers teaching competence in terms of:
   1.1 commitment;
   1.2 knowledge of the subject matter;
   1.3 teaching strategies; and
   1.4 classroom management.
2. To determine the overall satisfaction of students towards the science teaching competence of their teachers.
3. To investigate if there is a statistically significant influence of the science teaching competence variables on the overall satisfaction of students.

Conceptual framework of the study

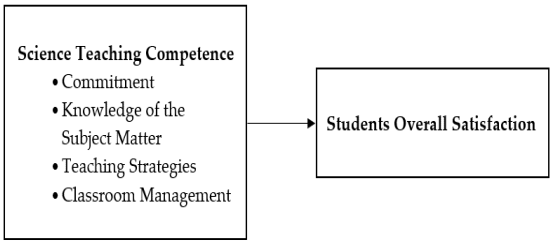

Figure 1 Conceptual framework of the study

To obtain the study objectives, Figure 1 presents the variables that were measured to test the claims of the study. Variables commitment, knowledge of the subject matter, teaching strategies, and classroom management were assessed to explain the extent of teaching competence of science teachers. On the other hand, students' overall satisfaction with their science teachers' teaching competence was set as the dependent variable. The variables under the science teaching competence dimension were categorically treated as continuous scale level of measurement, while the student's overall satisfaction was ordinal scale. The descriptive statistical measurements were calculated to describe the data sets. The regression analysis was applied to explore the extent of the influence of the science teaching competence variables on students' overall satisfaction.

Methodology

Research Design

This study utilized the descriptive and predictive correlational research design (Cox,

2016; Christensen, Johnson & Turner, 2011) to describe and measure the extent of science teachers' teaching competence and the student's overall satisfaction on the level of teaching competence of their science teachers. Also, to explore the relationship and influence of the science teaching competence variables on student's overall satisfaction.

Research respondents

The study respondents were the grade 10 students from the three secondary schools of Tolosa, Leyte, Philippines. One hundred ninety-five sample respondents were determined using the sample determination formula for the finite population. The stratified random sampling technique was used in the selection of respondents per school. Many respondents at 58% were in the age bracket of 14 to 15 years old. This was followed by 38% at 16 to 17 and 8% in the age group of 18 to 20 years old. On one hand, this study was represented mostly by female students at 63.8%.

Research instrument

The researchers utilized an adopted survey questionnaire from the Performance Evaluation for Teachers in Eastern Visayas State University to collect the needed information in the study. The survey questionnaire was closed-ended and composed of the following salient parts: Part I of the questionnaire focuses on the level of competence of the science teachers in terms of commitment, knowledge of the subject matter, application of teaching strategy, and classroom management. and Part II of the questionnaire gathers data on the student's overall satisfaction with the competence of teachers in teaching science.

Each of the identified competencies consist of five items/statements where respondents were asked to rate using a five-point Likert scale ranging from (1) Not Competent to (5) Very Competent. Similarly, respondents were asked to rate their overall satisfaction towards their science teacher's teaching competence using the scale response (1) Very Dissatisfied to (5) Very Satisfied.

The reliability measures of the four factors measuring science teaching competencies were assessed using the Cronbach's Alpha reliability measurement to determine the consistency of the respondent's responses of what the item/statements were supposed to measure (Henseler, Ringle & Sarstedt, 2015; Peterson & Kim, 2013). The computed reliability coefficients were recorded at the range of 0.72 to 0.85 which were equal to or greater than 0.70, the reliability cut-off value (Vaske, Beaman & Sponarski, 2017). The result indicates that the factors were reliable.

Data analysis

Ordinal regression analysis was used to analyze the influence of science teaching competencies variables on the overall student satisfaction. Ordinal regression is a statistical technique that is used to test the relationship between one dependent variable and a set of independent variables. The dependent variable is the order response category variable and the independent variables may be categorical or continuous. With the use of the IBM SPSS statistical program, the results were determined, and the analysis is done by checking first how well does the model fit the data by examining the overall fit test of the data it is significant or not. If the result is significant, the model fits the data; second, checking the results for the test of parallel lines if the result is statistically nonsignificant, the model follows the assumption of proportional odds and the use of the model is appropriate in the study; and third, examining the coefficients, Wald statistics, and corresponding p values to determine the influence or effect of the independent variables to the outcome variable. Also, the percentages, weighted mean (WM), and standard deviation (SD) descriptive statistics were calculated to describe and assessed the profile variables and the teaching competence and satisfaction variables. The level of significance alpha was set at 0.05 for rejecting the null hypothesis.

Result and discussion

Students perceived level of science teaching competence

Table 1 indicates the perceived level of competence in the science teaching competence of the students towards their science teachers in Tolosa Leyte. It can be gleaned that students perceived their teachers as competent in terms

of commitment, knowledge of the subject matter, application of teaching strategy, and classroom management with a corresponding weighted mean of 3.60; 3.85; 4.19; 4.04, respectively. It can be noted further that the overall science teacher's teaching competence obtained a weighted mean of 3.92 (SD = 0.468), interpreted as competent with the standard deviation of 0.468 is interpreted as satisfied in terms of the student's level of satisfaction.

Table 1. Student's Perceived Level of Competence in Science Teaching Competence

Science Teaching Competence	WM	SD	Interpretation
Commitment	3.60	0.773	Competent
Knowledge of the subject matter	3.85	0.695	Competent
Application of teaching strategy	4.19	0.491	Competent
Classroom management	4.04	0.384	Competent
Grand Weighted Mean	3.92	0.468	Competent

Ranges for the Weighted Mean Interpretation: Very competent - 4.21 – 5.00, Competent - 3.41 – 4.20, Moderately competent - 2.61 – 3.40, Slightly competent - 1.81 – 2.60, Not competent - 1.00 – 1.80

The results imply that on average, science teachers are competent enough in terms of their science teaching competence such as commitment, knowledge of the subject matter, application of teaching strategies, and classroom management. Showing that teachers are committed, knowledgeable of the subject, and can use varied teaching strategies that enable them to manage the classroom effectively and efficiently. These results were supported by several studies (Avis, Fisher & Thompson,2010; Long, Ibrahim & Kowang, 2013; Sarwat & Muhammad, 2014; Katane et al., 2006; Rosas &West, 2011; Spearman & Watt, 2013).

Students overall satisfaction in science teaching competence

Table 2 presents that majority of students at 66.2% were satisfied with their science teacher's level of teaching competence. While there were only 3 or 1.5% of respondents who perceived dissatisfaction. On average, students were satisfied with their science teachers' teaching competence (MD = 4.0).

Table 2. Students Overall Satisfaction in Science Teaching Competence

Overall Satisfaction	Frequency	Percentage
Strongly Satisfied	41	21.0
Satisfied	129	66.2
Moderately Satisfied	22	11.3
Dissatisfied	3	1.5

**Median: - 4.0 - Satisfied*

The result implies a positive level of overall satisfaction of students towards their science teacher's competence.

Influence of perceived level of science teaching competence on overall satisfaction

The result shows that the level of science teaching competencies improves the model in showing its influence on students' overall satisfaction towards their science teacher competence in comparison to the model with intercept only. The unexplained variation decreases from 310.096 -2LL in the model with intercept only, to 298.775, $\chi 2(4) = 11.321$, $p = .023$. This indicates a good model fit of the data.

Table 3. Overall Model Test between the Level of Science Teaching Competence and Student Satisfaction

Model	*-2 LL*	χ^2	*Df*	*p*
Intercept Only	310.096			
Science Teaching Competencies	298.775	11.321	4	.023

Note: *-2LL* is -2 Log Likelihood, $p < .05$

In Table 4, the analysis revealed a nonsignificant result on the test of parallel lines,

$\chi 2(8) = 11.045$, $p = .199$. The assumption for the test of parallel lines that the result should be nonsignificant has followed. It only means that the regression coefficients are the same across responses and the model in showing the influence of students' perceptions towards the level of science teaching competencies on their overall satisfaction is appropriate.

Table 4. Test of Parallel Lines

Model	*-2 LL*	χ^2	*Df*	*P*
Null Hypothesis	298.775			
General	287.730[b]	11.045[c]	8	.199

Note: -2LL is -2 Log-Likelihood

The perception of the students towards the level of science teaching competencies of their science teachers has explained a significant amount of variance on students' overall satisfaction on science teaching competence, $\chi^2(4) = 11.32$, $p < .05$, for about 7.1% (Nagelkerke-$R^2 = .071$). Out of four science teaching competencies, application of teaching strategy showed statistically significant in influencing students' overall satisfaction, $\beta = -.197$, $SE^B = 0.07$, $Wald = 9.22$, $e^B = 0.82$, $p < .0.05$.

Table 5. Influence of Science Teaching Competencies on Student's Satisfaction

Model	*B*	e^B	SE^B	*Wald*	*Df*	*P*
Commitment	.034	1.04	.042	0.66	1	.416
Knowledge of Subject Matter	-.037	0.96	.047	0.63	1	.427
Application of Teaching Strategies	-.197	0.82	.065	9.22	1	.002
Classroom Management	.017	1.02	.085	0.04	1	.841

Note: Negelkerke Psuedo $R^2 = .071$
Dependent variable: Student's Satisfaction
$p < .05$
e^B = odds ratio

The results of significance and no significance of the variables under study were based only on the samples covered. The results may vary if other factors not included in the study may be added and samples are increased. The significance of the application of teaching strategies to students' satisfaction was supported by literature (Schroeder et al., 2007; Akram, 2019).

Conclusion and recommendations

According to the findings of the study, the level of science teachers teaching competence significantly influence the student overall satisfaction. Among the factors of science teaching competence included in this study, only the application of teaching strategies was found to be statistically significant in influencing the perceived overall satisfaction of students in their science teachers' competence. This implies that the utilization of varied teaching strategies in teaching science provides a positive influence on students learning such as higher involvement in the discussion as well as improved performance are likely to be achieved. In this case, students will perceive their experiences as productive and meaningful especially when they are actively involved in the learning process. Furthermore, teachers should consistently update themselves as to the current application of teaching strategies in instruction. Aside from teaching strategies, it is also important that teachers strive harder in developing the different competencies identified for them to get a positive impact in the academic world.

As a result, students will be engaged in a positive conversation providing feedback about their teachers in the classroom, and eventually gain trust and confidence towards their teachers' abilities. Effective teaching coincides with effective learning, and such, it shows students an important part in assessing their teachers' teaching competence. Students' perception influences the relationship between the interaction of a teacher and students in the class, which relatively may contribute to students' academic performance.

Although, this study revealed no significant influence of the other teaching competencies such as commitment, knowledge of the subject matter, and classroom management, it does not mean that these variables do not influence at all the overall student satisfaction. It is strongly recommended

to have parallel studies to verify the influence of these factors on satisfaction or to confirm or refute the study results. Moreover, this study has posed limitations to only a few teaching competence factors. It is highly recommended for future researchers to include other variables in teaching such as educational qualification, teacher's motivation, and interaction with students, and the increase of samples will be included in the study.

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Declaration of no conflict of interest

The authors declare that there is no conflict of interest.

References

Ahmad, J., Ather, M.R., & Hussain, M. (2014). Impact of big five personality traits on job performance (Organizational commitment as a mediator). *Management, Knowledge and Learning International Conference 2014*, June 25-27, Portorož, Slovenia.

Ahmed, W., Werf, G., Minnaert, A., & Kuyper, H. (2010). Students' daily emotions in the classroom: Intra-individual variability and appraisal correlates. *British Journal of Educational Psychology*, *80*(4), 583-597. http://doi.org/10.1348/000709910X498544.

Astawa, I. N., Mantra, I. B. N., & Widiastuti, I. A. M. S. (2017). Developing communicative english language tests for tourism vocational high school students. *International Journal of Social Sciences and Humanities, 1*(2), 58-64. https://doi.org/10.29332/ijssh.v1n2.43

Akram, M. (2019). Relationship between Students' Perceptions of Teacher Effectiveness and Student Achievement at Secondary School Level. *Bulletin of Education and Research, 41*(2), 93-108. https://files.eric.ed.gov/fulltext/EJ1229453.pdf

Avis, J., Fisher, R., and Thompson, R., (2011). *Teaching in Lifelong Learning. A guide to theory and practice.* Open University Press.

Bell, D. V. J. (2016). Twenty-first Century Education: Transformative Education for Sustainability and Responsible Citizenship. *Journal of Teacher Education for Sustainability, 18*(1), 48-56. https://doi.org/10.1515/jtes-2006-0004

Bibi, S. (2005). *Evaluation study of competencies of secondary school teachers in Punjab* [Doctoral disertation, University of Arid Agriculture Rawalpindi]. https://www.semanticscholar.org/paper/Evaluation-Study-of-Competencies-of-Secondary-in-Bibi/fdae4c63c64d258c62ff3a51fec46a8ffbd8a265#paper-header

Butt, B. Z., & Rehman, K. (2010). A study examining the students satisfaction in higher education. *Procedia – Social and Behavioral Sciences*, *2*(2), 5446-5450. https://doi.org/10.1016/j.sbspro.2010.03.888

Carreker, S., & Boulware, R. (2015). *The personal competencies through the eyes of the classroom teacher*. Center on Innovations in Learning, Temple University. http://www.centeril.org/resources/PCs_and_the_Teacher.pdf

Chory, R. M., & Offstein, E. H. (2017). "Your professor will know you as a person" evaluating and rethinking the relational boundaries between faculty and students. *Journal of Management Education*, *41*(1), 9-38. https://doi.org/10.1177%2F1052562916647986

Cornillez Jr., E. E. C. (2019). Instructional quality and academic satisfaction of university students. European *Journal of Education Studies, 6*(4), 13-31. https://doi.org/10.5281/zenodo.3269406

Cox, K. A. (2016). Quantitative research designs. In G. J. Burkholder, K. A. Cox, & L. M. Crawford (Eds.), The Scholar-Practitioner's Guide to Research Design. Baltimore, MD: Laureate Publishing.

Dantes, N. (2014). *Education Basis for Overview of the Macropedagogical Dimension*. Yogyakarta: Graha Science.

Darling-Hamond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives. 8*(1), 1-44. https://doi.org/10.14507/epaa.v8n1.2000

Desshields Jr., O. W., Kara, A and Kaynak, E. (2005). Determinants of business student satisfaction and retention in higher education: Applying Herzberg's two factor theory. *International Journal of Educational Management, 19(*2), 28-139. https://doi.org/10.1108/09513540510582426

Douglas, J., Douglas, A., & Barnes, B. (2006). Measuring student satisfaction at a UK university. *Quality Assurance in Education, 14*(3), 251-267. https://10.1108/09684880610678568

Ganeb, M. D., & Montebon, D. R. T. (2018). Student perception of science as influenced by spark science learning system. *Acta Didactica Napocensia*, *11*(1), 87-99. https://files.eric.ed.gov/fulltext/EJ1177003.pdf

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science*, *43*(1), 115-135. https://doi.org/10.1007/s11747-014-0403-8

Hussain, M. A., Ahmed, I., & Haider, S. Z. (2014). Investigating the relationship among commitment, job satisfaction and emotional intelligence-evidence from teachers at teachers secondary level in Pakistan. *Journal of Education and Social Sciences, 2*(2), 127-142. https://geistscience.com/JESS/issue2-14/Article2/JESS1402102.pdf

Jalali, A., Islam, M. A., & Ariffin, K. H. K. (2011). Service satisfaction: The case of a higher learning institution in Malaysia. *International Education Studies*, *4*(1), 182-192. https://files.eric.ed.gov/fulltext/EJ1066421.pdf

Jamal, A. H. (2014). Leadership styles and value systems of school principals. *American Journal of Educational Research*, *2*(12), 1267-1276. https://doi.org/10.12691/education-2-12-22

Kabadayi, A. (2016). A suggested in-service training model based on Turkish preschool teachersí conceptions for sustainable development. *Journal of Teacher Education for Sustainability*, *18*(1), 5-15. https://doi.org/10.1515/jtes-2016-0001

Kane, T. J., Staiger, D. O. (2012). Gathering feedback for teaching: Combining high-quality observations with student surveys and achievement gains. Seattle, WA: Bill & Melinda Gates Foundation. https://files.eric.ed.gov/fulltext/ED540960.pdf

Katane, I., Aizsila, A., & Beitere, Z. (2006). Teacher competence and further education as priorities for sustainable development of rural school in Latvia. *Journal of Teacher Education and Training*, 6, 41-59.

Long, S., Zaiton, C., Zaiton, I. & Kowang, T. (2013). An analysis on the relationship between lecturers' competencies and students' satisfaction. *International Education Studies, 7*(1) 10.5539/ies.v7n1p37. https://doi.org/10.5539/ies.v7n1p37

Maba, W., & Mantra, I. B. N. (2018). The primary school teachers' competence in implementing the 2013 curriculum. In *SHS Web of Conferences*, *42*, 00035 https://doi.org/10.1051/shsconf/20184200035

Mantra, I. B. N. (2017). Promoting primary school teachers' competence through dynamic interactive workshop and partnership. *International Journal of Linguistic, Literature and Culture, 3*(1), 1-6. https://sloap.org/journals/index.php/ijllc/article/view/184

Mardapi, D., & Herawan, T. (2018). Assessing teacher competence and its follow-up to support professional development sustainability. *Journal of Teacher Education for Sustainability*, *20*(1), 106-123. https://doi.org/10.2478/jtes-2018-0007

Okeke, C. & N. Mtyuda, P. (2017). Teacher job dissatisfaction: Implications for teacher sustainability and social. *Journal of Teacher Education for Sustainability, 19*(1), 54-68. https://doi.org/10.1515/jtes-2017-0004

Park, S., Henkin, A.B. and Egley, R. (2005). Teacher team commitment, teamwork and trust: exploring associations. *Journal of Educational Administration*, *43*(5), 462-

479. https://doi.org/10.1108/09578230510615233

Patrick, C. L. (2011). Student evaluations of teaching: Effects of the Big Five personality traits, grades and the validity hypothesis. *Assessment & Evaluation in Higher Education*, *36*(2), 239-249. https://doi.org/10.1080/02602930903308258

Peterson, R. A., & Kim, Y. (2013). On the relationship between coefficient alpha and composite reliability. *Journal of Applied Psychology*, *98*(1), 194-198. https://doi.org/10.1037/a0030767

Petruzzellis, L., D'Uggento, A. M., & Romanazzi, S. (2006). Student satisfaction and quality of service in Italian universities. *Managing Service Quality, 16*(4), 349–364. https://pdfs.semanticscholar.org/2bd6/df15d930799193a6633679ba3ec5ea14891f.pdf

Roediger, V., Thorsten, G. & Isabelle, S. (2007). Service quality in higher education: The role of student expectations. *Journal of Business Research*, *60*(9), 949-959. https://doi.org/doi:10.1016/j.jbusres.2007.01.020

Sario L. P (2015). Students' satisfaction survey on PNU-NL services. *Journal of Arts, Science and Commerce, 6*(3).

Sarwat, S. & Muhammad, S. (2014). Impact of perceived teachers' competence on students' performance: Evidence for mediating/moderating role of class environment. *Journal on Educational Psychology*, *8*(1), 10-18. https://files.eric.ed.gov/fulltext/EJ1098630.pdf

Schenke, K., Ruzek, E., Lam, A. C., Karabenick, S. A., & Eccles, J. S. (2018). To the means and beyond: Understanding variation in students' perceptions of teacher emotional support. *Learning and Instruction*, *55*, 13-21. https://doi.org/10.1016/j.learninstruc.2018.02.003

Schreiner, L. A. (2009). Linking student satisfaction and retention. Research study: *Azusa Pacific University*. http://learn.ruffalonl.com/rs/395-EOG-977/images/LinkingStudentSatis0809.pdf

Schroeder, C. M., Scott, T. P., Tolson, H., Huang, T. Y., & Lee, Y. H. (2007). A meta-analysis of national research: Effects of teaching strategies on student achievement in science in the United states. *Journal of Research in Science Teaching, 44*(10), 1436-1460.

Suarman (2015). Teaching Quality and Students Satisfaction: The intermediatory role of relationship between lecturers and students of the higher learning institutes. *Mediterranean Journal of Social Sciences, 6*(2), 626-632. https://doi.rg/10.5901/mjss.2015.v6n2p626

Vaske, J. J., Beaman, J., & Sponarski, C. C. (2017). Rethinking internal consistency in Cronbach's alpha. *Leisure Sciences*, *39*(2), 163-173. https://doi.org/10.1080/01490400.2015.1127189

Walker, J. (2009). Authoritative classroom management: How control and nurturance work together. *Theory Into Practice, 48*(2), 122-129. https://doi.org/10.1080/00405840902776392

Wallace, T. L., Kelcey, B., & Ruzek, E. (2016). What can student perception surveys tell us about teaching? Empirically testing the underlying structure of the tripod student perception survey. *American Educational Research Journal*, *53*(6), 1834-1868. https://doi.org/10.3102/0002831216671864

Wilkins, S., Balakrishnan, M. S., & Huisman, J. (2012). Student satisfaction and student perceptions of quality at international branch campuses in the United Arab Emirates. https://doi.org/10.1080/1360080X.2012.716003

Xiao, Jian and Wilkins, Stephen (2015). The effects of lecturer commitment on student perceptions of teaching quality and student satisfaction on Chinese higher education. *Journal of Higher Education Policy and Management, 37*(1), 98-110. http://dx.doi.org/10.1080/1360080X.2014.992092

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