

Correlative Teaching Approach and Learning Interest Among Students in Technology Livelihood Education

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Abstract. The study aimed to investigate the influence of a correlative teaching approach on students' learning interest in Technology and Livelihood Education. The researcher selected 156 Grade 10 students in Kiblawan North District in Davao del Sur as the survey respondents in this study. A stratified random sampling technique was utilized in the selection of the respondents. Non-experimental quantitative research design using descriptive-correlational method was employed. The data collected were subjected to the following statistical tools: Mean, Pearson Moment Product Correlation, and linear regression analysis. Findings revealed that the correlative teaching approach was described as extensive, while students' learning interest in Technology and Livelihood Education in Kiblawan North District in Davao del Sur was rated moderately extensive. Further, correlation analysis demonstrated a significant relationship between the correlative teaching approach and students' learning interest in Technology and Livelihood Education in Kiblawan North District in Davao del Sur. Regression analysis proved that the correlative teaching approach in terms of classroom interaction, learning engagement, and learning attention significantly influenced the students' learning interest in Technology and Livelihood Education in Kiblawan North District in Davao del Sur. The study, therefore, was conducted to further utilize findings through publication in a reputable research journal.

KEY WORDS

1. Teaching home economics 2. correlative teaching approach 3. students learning interest in TLE 4. regression analysis

1. Introduction

Poor learning interest in Technology and Livelihood Education (TLE) among students can significantly affect the teaching-learning processes. Students with poor learning interests may be less engaged in classroom activities. They may show disinterest in discussions, practical exercises, and hands-on projects, reducing the overall level of participation. Poor interest may lead to decreased interaction between students and teachers. Students may be less likely to ask questions, seek clarification, or actively

participate in class discussions, limiting the exchange of ideas and knowledge. To address these challenges, educators may need to employ innovative teaching strategies, tailor lessons to students' interests and learning styles, and work towards fostering a positive and engaging learning environment in TLE classrooms. Collaborative efforts between teachers, students, and parents can also play a crucial role in enhancing learning interest and overall educational outcomes in TLE. Analoui (2010) reported that motivation to engage with the subject matter. This can result in poor academic performance as students may not invest the necessary time and effort to understand and master TLE concepts. TLE is designed to equip students with practical skills for future careers. Students lacking interest may not actively participate in hands-on activities, limiting their skill development and practical knowledge. Likewise, Thapa (2011) denoted that persistent disinterest in TLE can contribute to a negative attitude towards learning in general. Students may develop a mindset that views education as uninteresting or irrelevant to their lives. Students who are not interested in the subject are less likely to retain information. This can lead to gaps in understanding and hinder the application of TLE knowledge in real-world scenarios. On the contrary, Andersson (2017) highlighted that for students, making TLE content relevant to their everyday lives is crucial. Connecting the skills and knowledge taught in technology and livelihood education to real-world applications enhances their interest and motivation to learn, positively impacting their performance. Technology and livelihood education often involve hands-on, applicationoriented learning. According to Wood (2019) learning interest in technology and livelihood education often correlates with an understanding of the practical applications of the acquired knowledge and skills. Students interested in technology and livelihood education are more likely to see the real-world relevance of what they are learning and how it can be applied in various situations. Also, Parsons and Taylor (2012) asserted that technology and livelihood education emphasizes the development of critical skills such as problem-solving, creativity, and entrepreneurship. When students are interested in technology and livelihood education, they are more likely to invest time and effort in honing these skills, contributing to their

lack of interest often correlates with reduced Meanwhile, studies indicated possible link between correlative teaching approach and students' learning interest. For instance, Milner et al. (2012) indicates that correlative teaching approach often connects theoretical concepts to practical applications in real-world scenarios. This helps students understand the practical relevance of what they are learning, fostering a greater interest in applying their knowledge. Also, Saeed and Zyngier (2012) asserted that understanding the connections between different concepts can boost students' confidence in their ability to grasp complex ideas. Increased confidence can positively impact their interest in the subject matter. Adding more, Gemayel (2012) viewed that the approach encourages students to think critically and analyze the relationships between various ideas. This development of critical thinking skills can stimulate intellectual curiosity and enhance students' interest in exploring complex concepts. According to Qarareh (2016), accommodating different learning strategies and modalities, the correlative teaching approach provides a more personalized learning experience. As pointed out by Tunca (2015), the correlative teaching approach encourages students to see the bigger picture and understand how different concepts relate to each other. This can lead to a more profound and interconnected understanding of the subject matter. Anagün (2018) affirmed that by highlighting connections between different pieces of information, this approach may enhance memory retention. When students can see how one concept leads to another, it can create a mental framework that aids in remembering and recalling information. Adding more, Mutlu and Güler (2017) proposed that a correlative approach can facilitate the application of knowledge in real-world scenarios. When students understand how different concepts work together, they are better equipped to apply their knowledge in practical situations. The existing literature lacks a comprehensive overall personal and professional development. examination of specific domains within the Correlative Teaching Approach that significantly influence students' learning interests. While there is general acknowledgment of the positive impact of the Correlative Teaching Approach on learning interest, a more nuanced exploration is needed to identify the specific domains or elements of this approach that contribute most significantly to sustained student interest. Thus, it is in this context that the researcher felt the need to fill in the research gap by conducting a study in the Philippine setting, particularly

1.1. Review of Significant Literature—

1.1.1. Correlative Teaching Approach— The correlative teaching approach emphasizes connections between different concepts and subjects, making content more meaningful and interesting through interactive activities and collaborative learning (Cetin-Dindar, 2016; Jorde Dillon, 2012; Milner et al., 2012). This approach supports critical thinking and personalized learning, enhancing students' engagement and interest (Saeed Zyngier, 2012).

1.1.2. Learning Interest in Technology and Livelihood Education-Students' genuine interest in technology and livelihood education (TLE) fosters a positive attitude towards learning and leads to higher engagement (Lawson Lawson, 2013; Gibbens, 2019). Interest in TLE is linked to practical application, career readi- formance goals to students' individual preferness, and lifelong learning (Wood, 2019; Parsons Taylor, 2012; Andressa et al., 2015). Effective strategies include leveraging technology to enhance engagement and providing recognition for achievements (Zeidan Jayosi, 2015; Hubert, 2017).

1.1.3. Self-Efficacy—Students' belief in their own ability to succeed in TLE influences their engagement and interest. Moderate selfefficacy fosters motivation, resilience, and active participation, contributing to sustained interest in TLE (Tuan et al., 2005; Ozmentes, 2014; Aurah, 2017; Gun Yildiz, 2014; Clickenbeard, 2012; Fenning May, 2013).

in Kiblawan Nort District, Davao del Sur, using a quantitative approach. Specifically, the researcher used a descriptive-correlational design to understand the students' interests better as determined by the teachers' correlative teaching approach, which is found to be scarce. The present study intends to contribute to the limited body of knowledge regarding the student's interest in learning technology livelihood education in the context of students in Kiblawan Noth District, Davao del Sur.

1.1.4. Active Learning Strategies—Active learning strategies, such as hands-on activities and collaborative projects, enhance students' engagement and practical application of TLE concepts (Kubischta, 2014; Bramucci, 2013; Aregu, 2013; Nasiriyan et al., 2012; Brown, 2014). These strategies cater to diverse learning preferences and promote peer interaction (Brown, 2014).

1.1.5. Learning Values-Incorporating ethical principles and attitudes in TLE, such as responsibility, teamwork, and innovation, makes the subject more compelling and meaningful (Altındağ Senemoğlu, 2013; Granito Chernobilsky, 2012; Mbatha, 2015; Brown et al., 2014).

1.1.6. Performance Goals—Tailoring perences and aspirations enhances their engagement and achievement in TLE (Guido Dela Cruz, 2011; Michaelis, 2015; Sever et al., 2014).

1.1.7. Learning Environment Simulation— Simulated scenarios and projects provide handson experiences and practical insights, fostering interest and engagement in TLE (Tuan et al., 2005; Akomolafe Adesua, 2015; Mubeen Reid, 2014; Taylor, 2014).

1.1.8. Students' Learning Interests—Students' learning interest in TLE is crucial for fostering motivation, engagement, practical application of skills, and a positive attitude to-

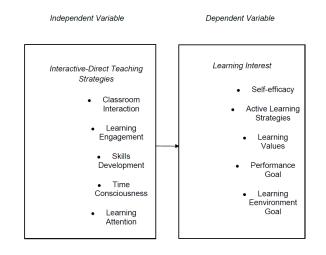


Fig. 1. The Conceptual Framework of the Study wards learning (Glynn et al., 2012; Andersson, Chumbley et al., 2015; Albalate et al., 2018). 2017; Cardelús, 2015; Chan Norlizah, 2017;

Theoretical/Conceptual Framework— 1.2. The study is anchored on the proposition of Cetin-Dindar (2016) that correlative teaching approach emphasizes the connections between different concepts and subjects. This helps students see the relevance of what they are learning to real-life situations, making the content more meaningful and interesting. This approach often involves interactive activities, discussions, and collaborative learning. Students are actively engaged in the learning process, which can enhance their interest as they participate and contribute to class activities. According to Qarareh (2016) correlative teaching approach provides a more personalized learning experience. Tailoring the approach to individual needs can increase students' interest by allowing them to engage with the material in ways that suit their preferences. In support, Saeed and Zyngier (2012) postulated that understanding the connections between different concepts can boost students' confidence in their ability to grasp complex ideas. Increased confidence can positively impact their interest in the sub-

ject matter. Ayaz and Şekerci (2015) asserted that the emphasis on relationships and connections between concepts can aid in memory retention. When students can see how different pieces of information fit together, they are more likely to remember and understand the material, sustaining their interest. The study was also anchored on Constructivist Theory by Piaget (1968) which indicates that humans create knowledge through the interaction between their experiences and ideas. The view of constructivism is the inspiration for radical constructivism due to his idea that the individual is at the center of the knowledge creation and acquisition process. This intention, along with their perceptions of capability, determines the likelihood that they will perform this behavior. The theory implies that social phenomena and categories are not only produced through social interaction but they are in a constant state of revision. In other words, this position reflects the understanding of a whole phenomenon via the perspective of those who live it and make sense of it.

As shown in Figure 1, the study is consisting of two variables. The independent variable of the study is correlative teaching approach or the method that emphasizes the interconnection and relationship between different concepts, skills, or subjects. The measures of teachers' correlative teaching approach according to Yıldırım (2014) are classroom interaction or the the dynamic exchange of ideas, questions, and discussions between the teacher and students, as well as among the students themselves, with a specific focus on highlighting relationships and connections between different concepts; learning engagement or the active involvement, interest, and participation of students in the learning process; skills development or the intentional cultivation of a range of cognitive and practical abilities as students engage with the interconnected nature of different concepts; time consciousness or the awareness and consideration of time as an essential factor in the learning process; learning attention or the focused awareness and cognitive engagement of students in exploring and understanding the relationships between different concepts; and conducive environment or the learning setting that is supportive, engaging, and tailored to facilitate the exploration and understanding of relationships between different concepts. The dependent variable of this study is the learning interest or the

students' level of curiosity, engagement, and motivation in the context of technology and livelihood education. The measures of learning interest are self-efficacy or the students' belief in their own ability to understand, learn, and succeed in school-related tasks and activities; active learning strategies or the instructional methods that engage students in participatory, handson, and interactive experiences to foster a deeper understanding of technology and livelihood education concepts; learning value or the ethical principles, attitudes, and behaviors that students develop as they engage with technology and livelihood education content; performance goal or the specific, measurable objectives that students aim to achieve in terms of their academic and practical performance in technology and livelihood education subjects; and learning environment stimulation which refers to the extent that involve the use of simulated scenarios. activities, or projects that replicate real-world technological and livelihood situations.

1.3. Statement of the Problem—The primary aim of this study was to determine which domains of teachers' correlative teaching approach significantly influence the learning interest of students in technology livelihood education in Kiblawan North District, Davao City. Specifically, this study seeks to answer the following questions:

- (1) What is the extent of teachers' correlative teaching approach in terms of:
 - (1) Classroom Interaction;
 - (2) Learning Engagement;
 - (3) Skills Development;
 - (4) Time Consciousness;
 - (5) Learning Attention; and
 - (6) Conducive Environment?
- (2) What is the extent of learning interest of students in technology livelihood education in terms of:
 - (1) self-efficacy;
 - (2) active learning strategies;
 - (3) learning values;
 - (4) performance goal; and

(5) learning environment simulation?

- (3) Is there a significant relationship between teachers' correlative teaching approach and the learning interest of students in technology livelihood education in Kiblawan North District, Davao del Sur?
- (4) Which domain of teachers' correlative teaching approach significantly influence the learning interest of students in technology livelihood education in Kiblawan North District, Davao del Sur?

potheses were tested at 0.05 level of significance: H01: There is no significant relationship between teachers' correlative teaching approach and learning interest of students in technology livelihood education in Kiblawan North District, Davao del Sur. H02: None of the domain of teachers' correlative teaching approach significantly influence the learning interest of students in technology livelihood education in Kiblawan North District, Davao del Sur. The current study would generate social value because it contributes to educational and sociological study in three important ways. This study may be beneficial to identified sectors of the academe in the Philippines. School Administrator. The outcome of the study may provide the school administrator with an understanding of the seriousness of increasing interest in learning among students in society nowadays, especially in the elementary school context. Lack of learning interest is something that every teacher encounters during his or her teaching career. This may serve as the basis for the school administrators to send teachers to training and seminars for the teacher to improve the ability of students to be increased by paying attention to the wishes of students based on the motivation they have. Teachers. The teacher must know how students are motivated in order to improve students' interest in learning. When a teacher already knows how to increase students' interest, it may be easier for the teacher to approach when teaching in class so students can take lessons with pleasant feelings. Besides

1.4. Hypothesis—The following null hy- that, it can help teachers to make plans to teach effectively. The teacher can also find out that students who have an interest in learning when learning can absorb lessons better than students who are not motivated. Therefore, the teacher must continue to try to stimulate students so that the motivation to learn appears. Future Researchers. Prospective researchers are expected to conduct the same research in a wider population and sample because other levels of institutions will have different results. However, this thesis will still be useful for giving some contributions and information to future researchers so that the developers of other education can also feel the advantages and benefits. For more comprehensive understanding, the following terms were defined operationally: Teachers' Correlative Teaching Approach. This is defined as the set of processes that creates a student-centered environment where learners generally support each other's learning and construct knowledge by using information resources and various tools to solve a problem or to reach their learning goals. In this study, the independent variable is described in terms of classroom interaction, learning engagement, skills development, time development, time consciousness, learning attention, and conducive environment. Learning Interest is characterized as the internal condition that stimulates, directs, and maintains an attitude toward learning. In this study, the dependent variable is described in terms of the following indicators: self-efficacy, active learning strategies, learning values, performance goal, and learning environment simulation.

2. Method

This section contains the research design, research respondents, research instrument, data gathering procedure, and data analysis.

2.1. *Research Design*—To achieve the study's objectives, the researcher used the quantitative descriptive-correlational technique of research to gather data ideas, facts, and information related to the study. Bhandari (2020) defined quantitative research is a research strategy that focuses on quantifying the collection and analysis of data. It is formed from a deductive approach where the emphasis is placed on the testing of theory, shaped by empiricist and positivist philosophies, while non-experimental research is research that lacks the manipulation of an independent variable. Rather than manipulating an independent variable, researchers conducting non-experimental research simply measure variables as they naturally occur in the real world. Meanwhile, correlational research, according to Myers and Well (2013), examines how the independent variable influences the dependent variable and establishes causeand-effect relationships between variables. In this study, the researcher was able to investigate the relationship between two variables- the relationship between teachers' correlative teaching approach and the learning interest of student's technology livelihood education. In this connection, the study focused on the relationships between these variables to determine the significance of the relationship. In this study, the use of descriptive-correlational was appropriate because the researcher only focused on the behavioral aspect of the respondents and the researcher did not perform an experiment in a controlled set-up.

2.2. Research Respondents—The respondents of the study were the grade 10 students in Kiblawan North District, Davao del Sur. In this study, the 156 respondents were selected through a stratified random sampling technique. Stratified random sampling is a method of sampling that involves the division of a population into smaller sub-groups known as strata. According to Shi (2015), in stratified random sampling, or stratification, the strata are formed based on members' shared attributes or characteristics, such as income or educational attainment. Stratified random sampling is appropriate in this study because there is heterogeneity in a population that can be classified with ancillary information. In this study, specific inclusion criteria were implemented to determine the respondents. The primary consideration of this study was to select respondents who could provide information to achieve the purpose of this study. The inclusion criteria are as follows: those Bonafide enrolled grade 10 students in Kiblawan North District in Davao del Sur; students willing to share their experiences, perceptions, and opinions regarding the Correlative Teaching Approach and its impact on their learning interest; those students who are available during the data collection period, ensuring their participation in surveys, interviews, or other data collection methods; and those who voluntarily signed the ICF were given the survey questionnaires. Moreover, the study was delimited only to the nature of the problem based on the research questions and thus it did not consider the socio-economic status of the students.

2.3. Research Instrument—The study employed the adapted questionnaires to fit the context of the respondents of this study. The first part of the instrument was concerned with the teachers' correlative teaching approach. The instrument was composed of statements that were divided into indicators, namely classroom interaction, learning engagement, skills development, time development, time consciousness,

Range of Mean	Descriptive Level	Interpretation
4.20 - 5.00	Very Extensive	The teachers' correlative teaching approach is always observed.
3.40 - 4.19	Extensive	The teachers' correlative teaching approach is oftentimes observed.
2.60 - 3.39	Moderately Extensive	The teachers' correlative teaching approach is sometimes observed.
1.80 – 2.59	Less Extensive	The teachers' correlative teaching approach is seldom observed.
1.00 – 1.79	Not Extensive	The teachers' correlative teaching approach is never observed.

learning attention, and conducive environment. scale and was determined based on the follow-The questionnaire made use of a 5-point Likert ing range of mean:

The instrument's second part was about students' interest in technology livelihood education. The questionnaire comprises statements measured in terms of self-efficacy, active learning strategies, learning values, performance goals, and learning environment goals. The reliability of the new scale obtained Cronbach's alpha value of 0.947, which was interpreted as

excellent, indicating high reliability and consistency among the items. In answering the questionnaire, the respondents made use of the 5-Likert scale. As a guide in determining the extent of students' interest in learning English, the researcher made use of the range of means, descriptions and interpretations as presented below:

Range of Mean	Descriptive Level	Interpretation
4.20 - 5.00	Very Extensive	The students' learning interest is always manifested.
3.40 - 4.19	Extensive	The students' learning interest is oftentimes manifested.
2.60 - 3.39	Moderately Extensive	The students' learning interest is sometimes manifested.
1.80 – 2.59	Less Extensive	The students' learning interest is seldom manifested.
1.00 – 1.79	Not Extensive	The students' learning interest is never manifested.

of the value of 5 as an average cut-off point or was subject to validation by three experts and the fair level, with a uniform interval of 0.80. was revised according to their expert comments.

The scaling was done by having one-half Before the administration of the instrument, it

2.4. Data Gathering Procedure—Steps were undergone by the researcher in conducting the study after the validation of the research questionnaire. Permission to Conduct the Study. The researcher secured the permission to conduct the study. The researcher secured the endorsement from the Dean of the Graduate School in Rizal Memorial Colleges, Inc., Davao City. The endorsement letter from the Dean of the Graduate School in Rizal Memorial Colleges, Inc., Davao City, was attached to the permission letters to be endorsed to the school's division superintendent and then to the school principals of the selected public secondary schools in Kiblawan North District, Division of Davao del Sur. Distribution and Retrieval of the Questionnaire. The researcher distributed the research instrument to the respondents after the study was approved. The study was conducted in the second quarter of S.Y. 2023-2024. Upon distributing the questionnaires, the benefits of the survey were briefly discussed and explained to the identified respondents of the study. For the questionnaire administration, the researcher adhered to compliance with Health protocols issued by both local and national authorities. The study respondents were given enough testing time to finish the questionnaires. After this, the data collected were subjected to quantitative analysis. Collation and Statistical Treatment of Data. After the questionnaire was retrieved, the scores of each respondent were tallied to organize the data per indicator. Then, each score was subjected to descriptive and inferential analysis using SPSS.

2.5. *Ethical Considerations*—The researcher promptly observed the protocols deemed necessary as the standard guidelines in carrying out the research study, following the study protocol assessment criteria, particularly in managing the population and data. The survey questionnaires with supporting authors were submitted for further evaluation. After the approval from the Ethics Committee,

the researcher proceeded to the next phase of the study. Informed Consent. The researcher obtained the consent of respondents through written informed consent. They were properly informed about the purpose of the study, and ample explanations were provided to help them better understand the reason for their participation so that they could choose whether to participate or not. It was made clear that the respondents' involvement in the study was voluntary. If they refused to participate, the researcher did not force them. Besides, the researcher was cautious in ensuring the respondents' psychological well-being. Written permission was secured from them. The researcher informed the respondents that the study aimed to conduct a study on the factors that hinder/promote the students' learning interest to teachers' correlative teaching approach and may contribute to the enhancement. Vulnerability of Research Participants. The study's respondents are students, so they were considered vulnerable since all of them were not yet of legal age. They are also considered highly vulnerable psychologically. The researcher emphasized that the survey was set at the respondents' convenience. Also, the researcher protected the confidentiality of the information disclosed. Privacy and Confidentiality. This study observed the Data Privacy Act of 2012, wherein the researcher assured that the data could not be traced back to the participants, who were the natural source of information, to protect the respondents' identities. Moreover, the researcher assured that no personal data would be shared without the respondents' consent. Thus, the access was limited to the researcher alone to ensure that no personal data would be exposed. After the necessary data was collected, the researcher permanently deleted all the survey results to ensure that data could not be traced back to the participants, who were the real source of information. Risk, Benefits, and Safety - In administering the survey questionnaires, the

researcher fully disclosed to the respondents the nature of their participation and explained thoroughly and adequately the purpose and benefits of the study and the confidentiality of their responses as stated in the online survey questionnaire. Without restrictions, the respondents could ask questions related to the study. Further, the researcher ensured that the respondents were not subjected to harm in any way whatsoever. Moreover, the questionnaire and interview guide used in this study did not contain any degrading or unacceptable statements offensive to the study's respondents. Likewise, this study was designed purely to collect academic information related to the study, and they were not asked for personal information. To minimize inconvenience, the researcher ensured that the respondents were given ample time to answer the survey questionnaire. The respondents were given the freedom not to answer questions that made them feel any psychological or emotional distress, and they would be free to withdraw as respondents to the study if they felt that they could not discuss the information that was being asked of them. The researcher valued their participation and placed their welfare as the highest priority during the study. Justice. To avoid impartiality in choosing the respondents, the researcher regarded all respondents equally regardless of whether they would be respondents in the survey. The researcher was not prejudiced in choosing the respondents of the study. Anybody qualified to be bonafide enrolled grade 10 students in the purposively selected schools. During the study, the researcher made certain to respect the respondents by interrupting their routine as little as possible. To compensate for the time spent during data gathering, the researcher gave tokens of appreciation to the respondents. This token was an assortment of souvenirs. The tokens were sent via courier, sealed carefully in a package. Also, each token was sanitized before being sent to your doorstep. Transparency. To provide transparency in this

study, any communication with the research was done with honesty and transparency. To safeguard the respondents' welfare, the researcher properly implemented the methods discussed in this study. All the necessary documents that supported the data analysis were included. Importantly, the researcher described the extent of the respondents' involvement in this study and shared how the researcher maintained objectivity in analyzing data and presenting the study's results. Qualification of the Researcher. The researcher ensured that the responses of the respondents were not influenced by any other factor like the conflict of interest. The findings of the study could be accessed by the respondent's parents and school administrators of the participating schools because the information would be made available if they followed proper protocol to protect the anonymity of the respondents. The researcher also acknowledged the effort of every person who contributed to the success of the In the study, the Division of Davao del Sur was furnished with a copy of the research results so that the respondents could access them and use them for learning and further study. Adequacy of Facilities. The researcher engaged the respondents in a conducive environment and learning materials that were ample and available during the study, which was done within the time set by the researcher. The accuracy of gathering data from the respondents was ensured by encoding the ratings of the respondents properly during the day when the researcher was not too tired to do them to avoid errors in encoding. Also, the analysis and results were proficient and aligned, serving as a primary basis for adequacy. Community Involvement. It was good practice to involve the community during every research phase, from planning to reporting. Hence, the researcher planned to share the findings generated with the community, and community involvement may be accorded primacy in making decisions about the research agenda, appropriate methods

to apply in their context, and used of the results or findings. The findings of this study would then be shared with the community through gatherings, fora, and conferences.

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> Data Analysis—The following were 2.6. the statistical tools utilized by the researcher in processing the gathered data: Mean. This was useful in characterizing the teachers' correlative teaching approach and students' learning interest in technology livelihood education. It was used to supply the answer for objectives 1 and 2. Pearson Product Moment Correlation was used in this study to assess the significant relationship between independent (teachers' correlative teaching approach) and dependent (students' learning interest in technology livelihood education) variables. It is a statistical measure of the strength of a linear relationship between paired data. In a sample, it is usually denoted by r. This was used to supply the answer for objective 3. Linear Regression. It was applied to evaluate the significance of the influence of the independent (teachers' correlative teaching approach) variable on the dependent (learning interest of students in technology livelihood education) variable. This was utilized to supply the answer to the objective

3. Results and Discussion

This chapter presents the results generated from the data gathered. It was sequenced based on the study's objectives, as presented in the first chapter. Thus, it presents the extent of the correlative teaching approach and students' learning interest in TLE, the significant relationship between the correlative teaching approach and students' learning interest in TLE, and the domains of the correlative teaching approach that significantly influence the students' learning interest in TLE.

3.1. Correlative Teaching Approach in terms Classroom Interaction—Table 1 shows that the correlative teaching approach in terms of classroom interaction was assessed by the Kiblawan North District in Davao del Sur students as extensive with a category mean of 3.51, interpreted as often observed. The mean rating of the different items ranges from 2.99 to 4.11. On one hand, the item Feeling more engaged during class interactions, as the correlative approach makes the learning process more interactive has a mean rating of 2.99, described as moderately extensive and interpreted as sometimes observed by respondents. On the other hand, the item Finding the discussions in class more focused and purposeful with the correlative teaching method has a mean of 4.11 described as ex-

3.2. Learning Engagement—Table 2 shows that the correlative teaching approach in terms of learning engagement was assessed by the Grade 10 students in Kiblawan North District in Davao del Sur as extensive with a category mean of 3.53, interpreted as oftentimes observed. The mean rating of the different items ranges from 3.03 to 4.02. On one hand, the item Finding that I participate more in class discus-

The result implies that students' active involvement, interest, and participation in the learning process are often observed. This agrees with Yliportimo's (2016) idea that students at moderate levels are encouraged to participate in discussions and activities highlighting connectensive and interpreted as oftentimes observed. The result implies that the classroom becomes a space where the interrelatedness of ideas is actively explored and emphasized. This supports Yıldırım's (2014) idea that the teacher actively engages with students to facilitate discussions on how various concepts are connected. The teacher guides students in understanding the relationships between different topics, fostering a deeper understanding of the subject matter. This also supports Bawa and Zubairu's (2015) assertion that students are encouraged to interact with each other, sharing insights and perspectives on how different ideas relate. Collaborative activities and discussions allow students to learn from their peers and collectively build a more comprehensive understanding of the material.

sions with the correlative teaching approach has a mean rating of 3.03, described as moderately extensive and interpreted as sometimes observed by the students. On the other hand, the item Enjoying the interactive nature of the correlative teaching approach, making learning more interesting has a mean of 4.02 described as extensive and interpreted as oftentimes observed in Kiblawan North District in Davao del Sur.

tions between concepts actively. This involvement promotes a sense of ownership over their learning and can increase engagement. According to Agsalog (2019), the correlative teaching approach emphasizes the real-world relevance of concepts. For students at moderate levels,

Statement	Mean	Descriptive Rating
Appreciating how the correlative teaching approach encourages active participation in class discussions.	3.34	Moderately Extensive
The structured interactions in class help me understand the connections between different concepts more ef- fectively.	3.67	Extensive
Feeling more engaged during class in- teractions, as the correlative approach makes the learning process more in- teractive.	2.99	Moderately Extensive
The teacher's use of examples to show relationships between topics makes the class discussions more interesting for me.	3.45	Extensive
Finding the discussions in class more focused and purposeful with the cor- relative teaching method.	4.11	Extensive
Overall Mean: 3.51 (Extensive)		

Table 1. Correlative Teaching Approach in Terms of Classroom Interaction

this can make the learning experience more meaningful as they see how different ideas are interconnected and applicable to their current level of understanding.

3.3. Skills Development—Table 3 shows that the correlative teaching approach in terms of skills development was assessed by the Kiblawan North District in Davao del Sur students as extensive with a category mean of 3.46, interpreted as often observed. The mean rating of the different items ranges from 3.13 to 4.17. On the one hand, the item Feeling more competent in the subject's skills through the correlative teaching approach has a mean rating of 3.13, described as moderately extensive and interpreted as sometimes observed by respondents. at moderate levels to apply their knowledge to On the other hand, the item Believing my skills have progressed due to the correlative teaching tributes to the development of problem-solving approach has a mean of 4.17, described as ex- skills, an essential competency in various acatensive and interpreted as oftentimes observed. demic and real-world scenarios.

The result means that the development of skills such as critical thinking, analytical reasoning, problem-solving, and the ability to recognize and apply relationships between ideas is oftentimes observed among students in Kiblawan North District, Davao del Sur. This agrees with Alsaleh's (2020) idea that students are prompted to analyze the connections between different ideas. For those at moderate levels, this emphasis on analytical reasoning helps them break down complex information into manageable components, fostering a systematic approach to problem-solving. This also supports Panadero's (2017) proposition that engaging with the correlative teaching approach challenges students solve problems. This practical application con-

Statement	Mean	Descriptive Rating
Feeling engaged in the learning pro- cess when the correlative teaching ap- proach is used.	3.41	Extensive
The correlative teaching method keeps me focused and involved throughout the entire class.	3.71	Extensive
Finding that I participate more in class discussions with the correlative teaching approach.	3.03	Moderately Extensive
The approach enhances my overall en- gagement with the subject matter com- pared to traditional methods.	3.48	Extensive
Enjoying the interactive nature of the correlative teaching approach, making learning more interesting.	4.02	Extensive

Table 2. Correlative Teaching Approach in Terms of Learning Engagement

Overall Mean: 3.53 (Extensive)

 Table 3. Correlative Teaching Approach in Terms of Skills Development

Statement	Mean	Descriptive Rating
Seeing a positive impact on my skill development with the correlative teaching method.	3.23	Moderately Extensive
Believing the correlative approach enhances my ability to apply learned skills.	3.33	Moderately Extensive
Feeling more competent in the sub- ject's skills through the correlative teaching approach.	3.13	Moderately Extensive
Thinking the correlative teaching method is effective in developing practical skills.	3.45	Extensive
Believing my skills have progressed due to the correlative teaching ap- proach.	4.17	Extensive
Overall Mean: 3.46 (Extensive)		

3.4. *Time Consciousness*—Table 4 shows that the students in Kiblawan North District in Davao del Sur assessed the correlative teaching approach in terms of time consciousness as extensive with a category mean of 3.65, interpreted as often observed. The mean rating of the different items ranges from 2.92 to 4.09. On the one hand, the item Finding that the correlative approach helps me pace my learning within the allocated time has a mean rating of 2.92, described as moderately extensive and interpreted as sometimes observed by the students. On the other hand, Believing the correlative teaching approach helps me manage my time efficiently has a mean of 4.09 described as extensive and interpreted as oftentimes observed. The result

implies that the awareness and consideration of time as an essential factor in the learning process is oftentimes observed among students in Kiblawan North District, Davao del Sur. The result supports the idea of Obijiaku (2015) that teachers employing the correlative teaching approach for students at moderate levels need to strike a balance between exploring connections and covering the curriculum. Time consciousness ensures that the learning pace is manageable, allowing students to grasp concepts without feeling rushed. According to Clark (2014), for students at moderate levels, this means that instructional time is focused on meaningful activities and discussions that enhance their understanding of connections between concepts.

Statement	Mean	Descriptive Rating
Believing the correlative teaching approach helps me manage my time efficiently.	4.09	Extensive
Feeling more conscious of time dur- ing correlative teaching sessions.	4.02	Extensive
Thinking the correlative approach en- courages a sense of time awareness in class.	3.68	Extensive
Finding that the correlative teaching method helps me stay on schedule.	3.55	Extensive
Finding that the correlative approach helps me pace my learning within the allocated time.	2.92	Moderately Extensive

Table 4. Correlative Teaching Approach in Terms of Time Consciousness

3.5. Learning Attention—Table 5 shows that correlative teaching approach in terms of learning attention was assessed by the students in Kiblawan North District in Davao del Sur as extensive with a category mean of 3.44, interpreted as oftentimes observed. The mean rating of the different items ranges from 3.12 to 3.89. On the other hand, the item Finding it more accessible to concentrate in class with the correlative approach has a mean rating of 3.12, described as moderately extensive and interpreted as sometimes observed by respondents. On the other hand, the item Feeling more attentive to the subject matter with the correlative teaching method has a mean of 3.89 described as extensive and interpreted as oftentimes observed.

StatementMeanDescriptive RatingFeeling more focused during correla- tive teaching sessions.3.31Moderately ExtensiveBelieving the correlative teaching ap- proach enhances my learning atten- tion.3.45ExtensiveFinding it easier to concentrate in class with the correlative teaching method is effective in holding my fo- cus.3.41ExtensiveFeeling more attentive to the subject method.3.89ExtensiveOverall Mean: 3.44 (Extensive)3.44 (Extensive)			
 tive teaching sessions. Believing the correlative teaching approach enhances my learning attention. Finding it easier to concentrate in class with the correlative approach. Believing the correlative teaching method is effective in holding my focus. Feeling more attentive to the subject matter with the correlative teaching method. 3.45 Extensive 3.45 Extensive 5.45 Extensive 5.45 Extensive 5.45 Extensive 5.41 Extensive 5.41	Statement	Mean	Descriptive Rating
 proach enhances my learning attention. Finding it easier to concentrate in 3.12 Moderately Extensive class with the correlative approach. Believing the correlative teaching 3.41 Extensive method is effective in holding my focus. Feeling more attentive to the subject 3.89 Extensive matter with the correlative teaching method. 	0	3.31	Moderately Extensive
 class with the correlative approach. Believing the correlative teaching 3.41 Extensive method is effective in holding my focus. Feeling more attentive to the subject 3.89 Extensive matter with the correlative teaching method. 	proach enhances my learning atten-	3.45	Extensive
method is effective in holding my fo- cus. Feeling more attentive to the subject 3.89 Extensive matter with the correlative teaching method.	-	3.12	Moderately Extensive
matter with the correlative teaching method.	method is effective in holding my fo-	3.41	Extensive
Overall Mean: 3.44 (Extensive)	Feeling more attentive to the subject matter with the correlative teaching	3.89	Extensive
	Overall Mean: 3.44 (Extensive)		

Table 5. Correlative Teaching Approach in Terms of Learning Attention

The result suggests that students' focused awareness and cognitive engagement in exploring and understanding the relationships between different concepts is often observed. This supports Temli- Dumus' (2016) findings that stu- rial is accessible and engaging. dents at moderate levels are guided to pay focused attention to exploring connections between concepts. The correlative teaching approach aims to capture their interest and direct their attention toward understanding how dif- Davao del Sur as extensive with a category mean ferent ideas relate to each other. Also, this is congruent to Llego's (2017) idea that learning attention in this context considers the moder- 3.25 to 4.19.

On the one hand, the item Depending on criteria in evaluating the students has a mean rating of 3.12, described as moderately extensive and interpreted as sometimes observed by respondents. On the other hand, the item Providing students with information regarding the accuracy of the answers has a mean of 4.02, which is described as extensive and interpreted as oftentimes observed. The result implies that a

ate proficiency level of students. Activities and discussions are designed to be relevant and challenging enough to maintain attention without overwhelming students, ensuring that the mate-

3.6. Conducive Environment—Table 6 shows that correlative teaching approach in terms of conducive environment was assessed by the students in Kiblawan North District in of 3.68, interpreted as oftentimes observed. The mean rating of the different items ranges from

learning setting that is supportive, engaging, and tailored to facilitate the exploration and understanding of relationships between different concepts is oftentimes observed. The result is congruent to Gurel's (2014) idea that a conducive environment fosters a positive classroom atmosphere for students at moderate levels. A supportive and encouraging atmosphere enhances their confidence and willingness to actively dis-

Statement	Mean	Descriptive Rating
Believing the correlative teaching approach creates a conducive learning environment.	3.45	Extensive
Feeling that the classroom is more conducive to learning with the correl- ative approach.	3.12	Moderately Extensive
Finding it easier to focus and learn in a conducive environment provided by the correlative teaching method.	3.41	Extensive
Believing the correlative approach contributes to a supportive and con- ducive classroom setting.	3.45	Extensive
Feeling that the learning environment is more comfortable with the correla- tive teaching method.	4.02	Extensive
Overall Mean: 3 49 (Extensive)		

Table 6. Correlative Teaching Approach in Terms of Conducive Environment

Overall Mean: 3.49 (Extensive)

cuss connections between concepts. According to Tomlinson and Jarvis (2014), a conducive environment allows flexible seating arrangements supporting different instructional strategies. For students at moderate levels, this may involve arrangements that facilitate group discussions, peer interactions, and varied learning activities. The environment provides easy access to learning resources relevant to the correlative teaching approach.

3.7. The Summary of the Extent of Correlative Teaching Approach in Kiblawan North District, Davao del Sur—Lastly, Table 7 summarizes the correlative teaching approach in Ki-

This means that the approach often involves showing how various pieces of information or skills are related and how they complement each other. The result agrees with the view of Tunca (2015) that the correlative teaching approach encourages students to see the bigger picture and understand how different concepts relate to

blawan North District, Davao del Sur. It shows that the overall mean of the correlative teaching approach acquired a mean score of 3.51, described as extensive and interpreted as often observed by the students. More so, the correlative teaching approach in terms of time consciousness acquired the highest mean score of 3.65, described as extensive and interpreted as oftentimes observed, while the correlative teaching approach in terms of learning attention, got the lowest mean score of 3.44, described as extensive and interpreted as oftentimes observed by the respondents.

each other. This can lead to a more profound and interconnected understanding of the subject matter. This also supports Ahmad et al. (2015) that students might benefit from a correlative approach as it helps them grasp the subject matter rather than as isolated fragments. This can contribute to a more comprehensive and inte-

Indicators	Mean	Descriptive Equivalent
Classroom Interaction	3.51	Extensive
Learning Engagement	3.53	Extensive
Skills Development	3.46	Extensive
Time Consciousness	3.65	Extensive
Learning Attention	3.44	Extensive
Conducive Environment	3.49	Extensive
Overall Mean	3.51	Extensive

Table 7. Summary of Correlative Teaching Approach in Kiblawan North District,Davao del Sur

grated knowledge base. Correlative teaching 3.01 to 3.46. The item, Feeling interested in often involves analyzing relationships and drawing connections between ideas. 3.01 to 3.46. The item, Feeling interested in TLE when I have confidence in my ability to understand and apply the concepts has a mean

3.8. Students' Learning Interest in TLE in terms of Self-efficacy—Table 8 shows that students' learning interest in terms of self-efficacy was described by the students in Kiblawan North District in Davao del Sur as moderately extensive with a category mean of 3.18. This indicates that it is sometimes manifested. The mean rating of the different items ranges from

3.01 to 3.46. The item, Feeling interested in TLE when I have confidence in my ability to understand and apply the concepts has a mean rating of 3.01, described as moderately extensive and interpreted as this item sometimes manifested by the students. Moreover, the item Thinking my self-efficacy plays a significant role in shaping my interest in TLE subjects has a mean rating of 3.46, described as extensive and interpreted as this item oftentimes manifested.

Table 8. Students' Learning Interest in Terms of Self-efficacy

Statement	Mean	Descriptive Rating	
Believing my self-efficacy positively influences my interest in Technology Livelihood Education.	3.12	Moderately Extensive	
Feeling interested in TLE when I have confidence in my ability to understand and apply the concepts.	3.01	Moderately Extensive	
Thinking my self-efficacy plays a sig- nificant role in shaping my interest in TLE subjects.	3.46	Extensive	
Finding that my learning interest in TLE increases when I have a high level of self-efficacy.	3.11	Moderately Extensive	
Overall Mean: 3.18 (Moderately Extensive)			

fest confidence in applying the knowledge and skills acquired in technology and livelihood education to real-world situations, influencing their overall interest and engagement in the subject. The result agrees to Aurah's (2017) assertion that moderate self-efficacy suggests that students perceive technology and livelihood education tasks as challenging yet attainable. This balanced challenge is crucial for maintaining interest. Tasks that are too easy may lead to boredom, while tasks perceived as too difficult may result in frustration. According to Gun and Yildiz (2014), moderate levels of self-efficacy positively impact students' motivation to learn. When students believe in their ability to master technology and livelihood education content, they are more likely to approach learning enthusiastically and be willing to invest effort, fostering sustained interest. It implies a level of perseverance and resilience.

3.9. Active Learning Activities—Table 9 shows that students' learning interest in terms of active learning activities was described by the students in Kiblawan North District in Davao del Sur as moderately extensive with a category

This also supports Bramucci's (2013) assertion that students with moderate interest levels benefit from active learning as it facilitates the practical application of technology and livelihood education concepts. Hands-on activities, projects, and simulations allow them to see the relevance of theoretical knowledge, enhancing their interest by demonstrating the real-world implications of technology and livelihood education.

3.10. Learning Value—Table 10 shows that students' learning interest in terms of learning value was described by the students in Kiblawan North District in Davao del Sur as ex- students.

This implies that students oftentimes mani- mean of 3.33. This indicates that it is sometimes manifested. The mean rating of the different items ranges from 3.12 to 3.49. The item Thinking my interest in TLE topics is positively connected to the incorporation of hands-on activities has a mean rating of 3.12, described as moderately extensive and interpreted as this item sometimes manifested by the respondents. Meanwhile, the item Finding that my interest in TLE is higher when I actively participate in group projects and discussions has a mean rating of 3.49, described as extensive and interpreted as this item oftentimes manifested. This implies that the instructional methods that engage students in participatory, hands-on, and interactive experiences to foster a deeper understanding of technology and livelihood education concepts is sometimes manifested. The result is congruent to Kubischta's (2014) idea that active learning strategies cater to students with moderate levels of interest by providing engaging and participatory experiences. These strategies involve students directly in the learning process, capturing their attention and motivating them to explore technology and livelihood education topics more actively.

> tensive with a category mean of 3.42. This indicates that it is oftentimes manifested. The mean rating of the different items ranges from 3.28 to 3.55. The item Believing that learning values positively influence my interest in Technology Livelihood Education has a mean rating of 3.28, described as moderately extensive and interpreted as this item sometimes manifested by the grade 10 students. Further, the item Feeling more enthusiastic about TLE when learning values are part of the curriculum has a mean rating of 3.55, described as extensive and interpreted as this item oftentimes manifested by the

Statement	Mean	Descriptive Rating
Feeling that my learning interest in TLE is positively impacted using active learning strategies.	3.33	Moderately Extensive
Thinking my interest in TLE topics is positively connected to the incorpora- tion of hands-on activities.	3.12	Moderately Extensive
Finding that my interest in TLE is higher when I actively participate in group projects and discussions.	3.49	Extensive
Believing active learning activities significantly contribute to my sustained interest in TLE subjects.	3.39	Moderately Extensive
Overall Mean: 3.33 (Moderately Extensive)		

Table 9. Students' Learning Interest in Terms of Active Learning Activities

Table 10. Students' Learning Interest in Terms of Learning Value

Statement	Mean	Descriptive Rating
Believing that learning values signifi- cantly contribute to my sustained in- terest in TLE subjects.	3.37	Moderately Extensive
Believing that learning values posi- tively influence my interest in Tech- nology Livelihood Education.	3.28	Moderately Extensive
Feeling more enthusiastic about TLE when learning values are part of the curriculum.	3.55	Extensive
Finding that my interest in TLE sub- jects increases when I recognize the value of ethical decision-making.	3.46	Extensive

Overall Mean: 3.42 (Extensive)

This suggest that the ethical principles, attitudes, and behaviors that students develop as they engage with technology and livelihood education content is oftentimes manifested by the students in Kiblawan North District, Davao del Sur. This result is like the view of Altındağ and Senemoğlu (2013) that values-based learning in technology and livelihood education provides students with a sense of relevance and

meaning. Understanding the ethical implications of technology and livelihood practices for students with moderate interest levels can make the subject matter more compelling and meaningful. According to Granito and Chernobilsky (2012), the results showed that teaching values in technology and livelihood education include fostering a sense of responsibility in the use of technology. For students with moderate interest levels, understanding the impact of their actions in the technological realm can enhance their engagement by connecting theoretical knowledge to ethical practices.

3.11. Performance Goal—Table 11 shows that students' learning interest in terms of performance goals was described by the students in Kiblawan North District in Davao del Sur as moderately extensive with a category mean of 3.22. This indicates that it is sometimes manifested. The mean rating of the different items ranges from 2.95 to 4.18. The item Thinking my learning interest in TLE is positively influenced by the clarity of performance objectives has a mean rating of 2.98, described as moderately extensive and interpreted as this item sometimes manifested by the students. Further,

the item Believing that performance goals play a significant role in shaping my interest in TLE subjects has a mean rating of 3.41, described as extensive and interpreted as this item oftentimes manifested. This suggests that the specific, measurable objectives that students aim to achieve in terms of their academic and practical performance in technology and livelihood education subjects are sometimes observed. This supports Guido and Dela Cruz's (2011) assertion that technology and livelihood education performance goals can be tailored to students with moderate interest levels. Educators can tap into their individual preferences and aspirations by allowing students to set personalized learning objectives, making the goals more relevant and achievable.

Table 11. Students' Learning Interest in Terms of Performance Goal

Statement	Mean	Descriptive Rating
Feeling more enthusiastic about TLE when performance goals are clearly communicated and achievable.	3.22	Moderately Extensive
Thinking my learning interest in TLE is positively influenced by understand- ing how performance goals align with future careers.	3.28	Moderately Extensive
Believing that performance goals play a significant role in shaping my inter- est in TLE subjects.	3.41	Extensive
Thinking my learning interest in TLE is positively influenced by the clarity of performance objectives.	2.98	Moderately Extensive
Overall Mean: 3.22 (Moderately Exter	nsive)	

The result is also congruent to Akomolafe and Adesua's (2015) idea that performance goals for students with moderate interest lev- s—Table 12 shows that students' learning inels can focus on incremental skill development. terest in terms of learning environment simula-Breaking down larger skills into smaller, achievable goals ensures students experience a sense of accomplishment, maintaining or increasing

their interest in the subject.

3.12. Learning Environment Simulationtions was described by the students in Kiblawan North District in Davao del Sur as moderately extensive with a category mean of 3.24. This

indicates that it is sometimes manifested. The mean rating of the different items ranges from 2.96 to 3.39. The item, thinking my interest in TLE topics is higher when I can apply skills in realistic simulations has a mean rating of 2.96, described as moderately extensive and interpreted as this item sometimes manifested by

the students. Further, the item Believing that learning environment simulations positively influence my interest in Technology Livelihood Education has a mean rating of 3.39, described as moderately extensive and interpreted as this item sometimes manifested.

Table 12. Students' Learning Interest in Terms of Learning Environment Simulations

Statement	Mean	Descriptive Rating			
Believing that learning environment simulations positively influence my interest in Technology Livelihood Ed- ucation.	3.39	Moderately Extensive			
Feeling interested in TLE when learn- ing simulations are part of the curricu- lum.	3.21	Moderately Extensive			
Feeling that my learning interest in TLE is positively affected by immersive environment simulations.	3.38	Moderately Extensive			
Thinking my interest in TLE topics is higher when I can apply skills in realistic simulations.	2.96	Moderately Extensive			
Overall Mean: 3.24 (Moderately Extensive)					

This denotes that teachers were able to provide students with hands-on experiences and practical insights, fostering interest and engagement in technology and livelihood education subjects. The result supports Mubeen and Reid's (2014) proposition that simulations can be designed with a gradual increase in complexity. Students with moderate interest levels benefit from simulations that start with simpler tasks and progressively introduce more challenging elements, allowing for a steady and manageable learning curve. According to Taylor (2014), simulations can involve collaborative elements to encourage teamwork. Students with moderate interest levels may find value in working together to solve simulated problems, fostering

ment in technology and livelihood education.

The Summary of the Extent of Stu-3.13. dents' Learning Interests In Kiblawan North District In Davao Del Sur-Lastly, as shown in Table 13 is the summary of students' learning interests in Kiblawan North District in Davao del Sur. As shown in the table, the summary of students' learning interests obtained an overall mean score of 3.28 with a descriptive rating of moderately extensive and interpreted as sometimes manifested by the Grade 10 students. Adding more, results in Table 9 show that students' learning interest in terms of learning value acquired the highest mean score of 3.42, described as extensive and interpreted as oftentimes manifested, while students' learning a sense of camaraderie, and enhancing engage- interest in terms of self-efficacy acquired the

lowest mean score of 3.18 described as mod- manifested. erately extensive and interpreted as sometimes

Indicators	Mean	Descriptive Equivalent		
Self-Efficacy	3.18	Moderately Extensive		
Active Learning Activities	3.33	Moderately Extensive		
Learning Value	3.42	Extensive		
Performance Goal	3.22	Moderately Extensive		
Learning Environment Simulations	3.24	Moderately Extensive		
Overall Mean	3.28	Moderately Extensive		

Table 13. The Summary of the Extent of Students' Learning Interests In Kiblawan North District In Davao Del Sur

The result indicates that students' level of Livelihood Education in Kiblawan North District curiosity, engagement, and motivation in the context of technology and livelihood education is sometimes manifested in Kiblawan North District, Davao del Sur. The result is congruent to Andersson's (2017) idea that making TLE content relevant to students' everyday lives is crucial for students at moderate levels. Connecting the skills and knowledge taught in technology and livelihood education to real-world applications enhances their interest and motivation to learn, positively impacting their performance. Adding more, the result bears a similar conclusion to Chan and Norlizah's (2017) study that recognizing and incorporating diverse interests within the technology and livelihood education curriculum is essential. Students at moderate levels may have varying preferences, and a curriculum that accommodates a range of topics and activities can better capture their interest and enthusiasm.

3.14. Relationship Between Correlative Teaching Approach and Students' Learning Interest in Technology and Livelihood Education in Kiblawan North District, Davao del Sur-The results of the analysis of the relationship students' learning interest in Technology and relevant, encouraging active engagement, fos-

in Davao del Sur are presented. Bivariate correlation analysis using Pearson productmoment correlation was used to determine the relationship between the mentioned variables. Table 14 shows that the correlative teaching approach has a significant positive relationship with the student's learning interest in Kiblawan North District in Davao del Sur with a p-value of .000 that is less than .05 level of significance (two-tailed) (r = 0.617, p ; 0.05). It means that as the extent of the correlative teaching approach changes, students' learning interest also changes significantly. Adding more, results on the table shows that the correlative teaching approach in terms of classroom interaction; learning engagement; skills development; time consciousness; learning attention; and conducive environment have a significant positive relationship with the students' learning interest in Technology and Livelihood Education with a p-value of .000 that is less than .05 level of significance (twotailed) (r = 0.411, p < 0.05), (r = 0.515, p < 0.05), (r = 0.339, p < 0.05), (r = 0.661, p < 0.05), (r =0.552, p < 0.05), and (r = 0.608, p < 0.05), respectively. The result implies that the correlabetween the correlative teaching approach and tive teaching approach makes the content more

tering critical thinking, providing personalized boosting confidence, aiding memory retention, learning experiences, connecting theory to prac- accommodating different learning paces, and tice, creating a positive learning environment, promoting a mindset of lifelong learning.

.411* .515*	0.000	Reject H0
.515*	0.000	
	0.000	Reject H0
.339*	0.001	Reject H0
.661*	0.000	Reject H0
.552*	0.000	Reject H0
.608*	0.001	Reject H0
.617*	0.000	Reject H0
	661* 552* 608*	661* 0.000 552* 0.000 608* 0.001

Table 14. Relationship Between Correlative Teaching Approach and Students' Learning Interest in Technology and Livelihood Education in Kiblawan North District, Davao del Sur

The findings agree with the proposition of Adak (2017) that the approach emphasizes the connections between different concepts, making the content more relevant and applicable to real-life situations. This relevance can increase students' interest as they see the practical implications of what they are learning. This also supports Gemayel's (2012) idea that the approach encourages students to think critically and analyze the relationships between various ideas. Developing critical thinking skills can stimulate intellectual curiosity and enhance students' interest in exploring complex concepts.

Influence of Correlative Teaching 3.15. Approach on the Students' Learning Interest in Technology and Livelihood Education in Kiblawan North District. Davao del Sur-The significance of the influence of the correlative teaching approach on the students' learning interest in Technology and Livelihood Education in Kiblawan North District in Davao del Sur was analyzed using linear regression analysis. Table 15 shows that the correlative teaching approach

in terms of classroom interaction; learning engagement; skills development; time consciousness; learning attention; and conducive environment are considered predictors of students' learning interest in Technology and Livelihood Education in Kiblawan North District in Davao del Sur, the model is significant as evident on F-value of 27.837 with p<0.05. It is therefore stated that teachers' learning environment management skills predict the students' learning interest in TLE. Meanwhile, the computed adjusted R2 value of 0.351 indicates that the correlative teaching approach has contributed significantly to the variability of students' learning interest in TLE by 35.10. In addition, the table shows that there are domains of correlative teaching approach that significantly influence the students' learning interest in TLE in Kiblawan North District in Davao del Sur. This table also indicates that correlative teaching approaches in terms of classroom interaction, learning engagement, and learning attention are significant when the predictors are considered.

This means that the extent of students' learning of null hypothesis that none of the domains of interest in TLE increases by 0.161, 0.295, and correlative teaching approach that significantly 0.293 for each unit increase in correlative teach- influence the students' learning interest in TLE ing approach. Thus, this leads to the rejection in Kiblawan North District in Davao del Sur.

Table 15. Influence of Correlative Teaching Approach on the Students' Learning Interest in Technology and Livelihood Education in Kiblawan North District, Davao del Sur

Correlative Teaching proach	Ар-	В	Beta	S.E	p-value	Decision
Classroom Interaction		.161*	.231	.045	.000	Reject H0
Learning Engagement		.295*	.408	.047	.000	Reject H0
Skills Development		.085	.108	.049	.082	Accept H0
Time Consciousness		.033	.162	.053	.119	Accept H0
Learning Attention		.295*	.247	.065	.000	Reject H0
Conducive Environment		.091	.121	.061	.108	Accept H0
$R^2 = 0.351$						
F-value = 27.837*						
p-value = 0.000						
*Significant @ p<0.05						

*Significant @ p<0.05 This affirmed that situations, making the content more meaningful students' learning interest in TLE is a function and interesting. This approach often involves of the correlative teaching approach. The re- interactive activities, discussions, and collaborasult corroborates with Cetin-Dindar's (2016) tive learning. Similarly, this supports Jorde and findings that the correlative teaching approach Dillon's (2012) idea that correlative teaching emphasizes the connections between different approach encourages students to think critically concepts and subjects. This helps students see and understand the relationships between varithe relevance of what they are learning to real- ous ideas. life

Conclusions and Recommendations 4.

This part of the paper presents the researcher's conclusion and recommendation. The discussion is supported by the literature presented in the first chapters, and the conclusion is in accordance with statements of the problem presented in this study.

this study was to evaluate which domains of correlative teaching approach significantly influence the students' learning interest in Technology and Livelihood Education in Ki-

4.1. Findings—The primary objective of a non-experimental quantitative design using the descriptive-correlation technique. The researcher selected the 156 Grade 10 students in Kiblawan North District, Davao del Sur, as the respondents through a stratified random samblawan North District in Davao del Sur utilizing pling method. The researcher made use of

tionnaires, which were pilot-tested in a nearby school to ensure high reliability and internal consistency of the items in the instrument. Davao del Sur by 35.10 The correlative teaching approach in Kiblawan North District in Davao del Sur got an overall mean of 3.51 with an extensive descriptive rating. Also, correlative teaching approach in terms of classroom interaction; learning engage- Meanwhile, correlative teaching approaches in ment; skills development; time consciousness; learning attention; and conducive environment, ment, skills development, time consciousness, obtained the mean scores of 3.51, 3.53, 3.46, learning attention, and conducive environment 3.65, 3.44, and 3.49, respectively. Students obtained extensive descriptive ratings. This learning interest in TLE in Kiblawan North means that the approach often involves showing District in Davao del Sur has an overall mean of how various pieces of information or skills are 3.28, with a moderately extensive descriptive related and how they complement each other. rating. Also, students' learning interest in Students' learning interest in TLE in Kiblawan TLE in terms of self-efficacy, active learning North District in Davao del Sur was rated as activities, learning value, performance goal, moderately extensive. Students learning interand learning environment simulations obtained est in TLE in terms of self-efficacy, active learnmean scores of 3.18, 3.33, 3.42, 3.22, and 3.24, ing activities, performance goals, and learning respectively. The correlative teaching approach environment simulations belong to extensive rathas a significant positive relationship with the ings, while students' learning interest in TLE student's learning interest in TLE in Kiblawan in terms of learning value got moderately ex-North District in Davao del Sur with a p-value tensive ratings. This denotes that teachers were of .000 that is less than .05 level of significance able to provide students with hands-on experi-(two-tailed) (r = .617, p<0.05). Correlative teaching ences and practical insights, fostering interest approaches in terms of classroom interaction; and engagement in technology and livelihood learning engagement; skills development; time education subjects. The correlative teaching consciousness; learning attention; and con- approach has a significant positive relationship ducive environment have a significant positive with the student's learning interest in TLE in relationship with the student's learning interest Kiblawan North District in Davao del Sur. This in TLE in Kiblawan North District in Davao means that as the extent of the correlative teachdel Sur with a p-value of .000 that is less than ing approach changes, students' learning inter-.05 level of significance (two-tailed) (r = .411, est in TLE also significantly changes. The result p<0.05, (r = .515, p<0.05), (r = .339, p<0.05). implies that the correlative teaching approach (r = .661, p < 0.05), (r = .552, p < 0.05), and (r makes the content more relevant, encouraging)= .668, p<0.05). Correlative teaching approach active engagement, fostering critical thinking, in terms of classroom interaction, learning en- providing personalized learning experiences, gagement, and learning attention significantly connecting theory to practice, creating a posinfluenced the students' learning interest in TLE itive learning environment, boosting confidence, in Kiblawan North District in Davao del Sur, as aiding memory retention, accommodating difevidenced by the F-value of 27.837 and p₁0.05. ferent learning paces, and promoting a mind-

modified and enhanced adapted survey ques- tive teaching approach have contributed significantly to the variability of the students' learning interest in TLE in Kiblawan North District in

Conclusions—Based on the findings 4.2. of this study several conclusions were generated: The correlative teaching approach in Kiblawan North District in Davao del Sur was extensive. terms of classroom interaction, learning engage-The r2 value of 0.351 indicated that correla set of lifelong learning. Correlative teaching

approaches in terms of classroom interaction, regular classroom observations to assess how learning engagement, and learning attention sig- well the Correlative Teaching Approach is benificantly influenced the students' learning inter- ing integrated into TLE lessons and provide est in TLE in Kiblawan North District in Davao del Sur. This affirmed that students' learning interest in TLE is a function of the correlative teaching approach in Kiblawan North District in Davao del Sur.

4.3. *Recommendations*—The researcher recommends that DepEd review and enhance the TLE curriculum to ensure that it aligns with the principles of the Correlative Teaching Approach, emphasizing interdisciplinary connec- their learning preferences to teachers, providing tions and real-world applications. Moreover, insights into what teaching methods and activi-DepEd should invest in professional development programs for TLE teachers to equip them They should also actively participate in class diswith the skills and knowledge needed to im- cussions, group activities, and hands-on projects plement the Correlative Teaching Approach ef- to fully engage with the Correlative Teaching fectively in the classroom. School principals should prioritize training and ongoing support in-depth studies focusing on specific elements for TLE teachers to enhance their understanding or strategies within the Correlative Teaching and implementation of the Correlative Teach- Approach to identify their impact on students' ing Approach. School heads should conduct learning interest in TLE.

constructive feedback to teachers. TLE teachers should actively seek professional development opportunities to enhance their teaching skills, especially in integrating the Correlative Teaching Approach into TLE lessons. They should integrate real-world applications and industry relevance into TLE lessons to make the content more engaging and relevant to students' future careers. Students should communicate ties are most effective in capturing their interest. Approach. Future researchers should conduct

References 5.

- Agbabi, C. O., Onyeike, V. C., & Wali, W. I. (2013). Classroom management: A practical approach. University of Port Harcourt press.
- Agsalog, M. (2019). Experiential learning approach: Its effects on the academic performance and motivation to learn physics of grade 10 students [Retrieved from http://www.ijsrp.org/resepaper-0919/ijsrp-p93113.pdf]. International Journal of Scientific and Research Publications, 9(9), 844-850.
- Ahmad, C. N. C., Ching, W. C., Yahaya, A., & Abdullah, M. F. N. L. (2015). Relationship between constructivist learning environments and educational facility in science classrooms. Procedia - Social and Behavioral Sciences, 191, 1952–1957. https://doi.org/10.1016/j. sbspro.2015.04.672
- Akomolafe, C., & Adesua, V. (2015a). The classroom environment: A major motivating factor towards high academic performance of senior secondary school students in south west nigeria [Retrieved from https://files.eric.ed.gov/fulltext/EJ1086098.pdf]. Journal of Education and Practice.
- Akomolafe, C., & Adesua, V. (2015b). The classroom environment: A major motivating factor towards high academic performance of senior secondary school students in south west nigeria [Retrieved from https://files.eric.ed.gov/fulltext/EJ1086098.pdf]. Journal of Education and Practice, 6(34), 17–21.

- Albalate, A., Larcia, H., & Jaen, J. (2018). *Students' motivation towards science learning of stem students of university of batangas, lipa city* [Retrieved from https://www.grdspublishing.org
- Alkin, S. (2013). *Evaluation of elementary school teachers' behaviors of supporting critical thinking* [Unpublished doctoral thesis]. Ankara University Institute of Education Sciences.
- Alsaleh, N. (2020). Teaching critical thinking skills: Literature review [Retrieved from https://files.e *The Turkish Online Journal of Educational Technology*, *19*(1), 21–39.
- Alt, D. (2014). Contemporary constructivist practices in higher education settings and academic motivational factors [Retrieved from https://files.eric.ed.gov/fulltext/EJ1120641.pdf]. Australian Journal of Adult Learning, 56(3), 374–400.
- Altındağ, M., & Senemoğlu, N. (2013). Metacognitive skills scale [Retrieved from https://www.researchgate.net/publication/296839320 *Hacettepe University Journal of Education*, 28(1), 15–26.
- Alzahrani, I., & Woollard, J. (2013). *The role of the constructivist learning theory and collaborative learning environment on wiki classroom, and the relationship between them* [Retrieved from https://files.eric.ed.gov/fulltext/ED539416.pdf].
- Andersson, H. (2017). *Moten där vi blir sedda: En studie om elevers engagemang i skolan* [Doctoral dissertation]. Malmo hogskola.
- Andressa, H., Mavrikaki, E., & Dermitzaki, I. (2015). Adaptation of the students' motivation towards science learning questionnaire to measure greek students' motivation towards biology learning [Retrieved from https://doi.org/10.20876/ijobed.56334]. *International Journal Of Biology Education*, 4(2), 12–21. https://doi.org/10.20876/ijobed.56334
- Aregu, B. B. (2013). Enhancing self-regulated learning in teaching spoken communication: Does it affect speaking efficacy and performance [Retrieved from https://e-flt.nus.edu.sg/v10n1201 3/aregu.pdf]. *Journal of Foreign Language Teaching*, 10(1), 96–109.
- Aurah, C. (2017). Investigating the relationship between science self-efficacy beliefs, gender, and academic achievement, among high school students in kenya [Retrieved from https://files.eric.ed.gov/fulltext/EJ1139069.pdf]. *Journal of Education and Practice*, 8(8), 146–153.
- Bas, G. (2013). Students' views on the constructivist learning environment in elementary schools: A qualitative inquiry [Retrieved from https://arastirmax.com/en/publication/cukurovauniversitesi-egitim-fakultesi-dergisi/42/2/students-views-constructivist-learning-environment-elementary-schools-qualitative-inquiry/arid/166e54c8-7b6b-4069]. Cukurova University Faculty of Education Journal, 42(2), 64–86.
- Basheer, A. N. A. (2014). Teachers' perceptions about constructivist learning in afghan schools. mathematics teachers' perceptions and usage of question-answer, individual and group
- Bawa, Work neukais worksi (2011) constructivist retrievel and velation of Modhttp://mpdcmsc.jentjficpress.com/Journals/ViewArticle.aspx?YTDXIp8pwb35qABc+2BV/ 9NItZguWvfvF7Zvjl+sSSDpLasVfL2uW4xG0GShqTPF]. International Journal of Modern Social Sciences, 4(2), 71–81.
- Bay, E., Bagceci, B., & Cetin, B. (2013). The effects of social constructivist approach on the learners' problem solving and metacognitive levels. *Journal of Social Sciences*, 9(1), 1–10. https://doi.org/10.3844/jssp.2013.1.10
- Bramucci, A. (2013). Self-regulated learning: Theories and potential applications in didactics [Retrieved from http://intelligent-tutor.eu/files/2012/06/I-TUTOR supportmaterial

- Brown, B. (2014). The impact of self-efficacy and motivation characteristics on the academic achievement of upward bound participants [Retrieved from https://aquila.usm.edu/cgi/viewcontent.cgi?article=1429&context=dissertations].
- Brown, P., McCord, R., Matusovich, H., & Kajfez, R. (2014). The use of motivation theory in engineering education research: A systematic review of literature [Retrieved from https://www.tandfonline.com/doi/abs/10.1080/03043797.2014.941339]. *European Journal of Engineering Education*, 23, 1–20.
- Cardelús, E. (2015). Motivationer, attityder och moderna språk: En studie om elevers motivationsprocesser och attityder vid studier och lärande av moderna språk. Stockholms universitet.
- Cavas, P. (2012). Factor affecting the motivation of turkish primary students for science learning [Retrieved from https://eric.ed.gov/?id=EJ941653]. *Science Education International*, 22(1), 31–42.
- Chan, Y. L., & Norlizah, C. H. (2017). Students' motivation towards science learning and students' science achievement [Retrieved from https://pdfs.semanticscholar.org/0598/ 7fd7aec616c39e2eb21403f19e4231d283a8.pdf]. International Journal of Academic Research in Progressive Education and Development, 6(4), 174–189.
- Chow, S. J., & Yong, B. C. S. (2013). Secondary school students' motivation and achievement in combined science [Retrieved from https://files.eric.ed.gov/fulltext/ED542966.pdf]. US-China Education Review, 3(4), 213–228.
- Chumbley, S. B., Haynes, C., & Stofer, K. A. (2015). A measure of students' motivation to learn science through agricultural stem emphasis [Retrieved from https://files.eric.ed.gov/fulltext/EJ1122894.pdf]. *Journal of Agricultural Education*, *56*(4), 107–122.
- Cirik, I., Colak, E., & Kaya, D. (2013). Constructivist learning environment: The teachers and students' perspectives [Retrieved from http://www.ijonte.org/FileUpload/ks63207/File/03.cirik.pdf]. *International Journal on New Trends in Education and Their Implications*, 6(2), 30–44.
- Clark, T. D. (2014). How to manage stress in college. volume one. publication, tdc enterprise [Retrieved from https://www.free-ebooks.net/self-improvement/How-to-Manage-Stress-In-College-Study-Skills-and-Still-Have-Loads-Of-Fun-Vol-1/pdf?dl&preview].
- Clinkenbeard, P. R. (2012). Motivation and gifted students: Implications of theory and research [Retrieved from https://onlinelibrary.wiley.com/doi/abs/10.1002/pits.21628]. *Psychology in the Schools*, 49(7), 622–630.
- Cooper, K., & White, R. (2012). *Qualitative research in the post-modern era: Contexts of qualitative research* [Retrieved from https://www.springer.com/gp/book/9789400723382].
- Cunningham, K. R. (2013). The effect of motivation on student success in a first-year experience course [Retrieved from http://digitalcommons.wku.edu/cgi/viewcontent.cgi?article= 1040&context=dis].
- Evans, C. (2014). Exploring the use of a deep approach to learning with students in the process of learning to teach [Retrieved from https://eprints.soton.ac.uk/374302/].
- Fenning, B., & May, L. (2013). Where there is a will, there is an a: Examining the roles of self-efficacy and self-concept in college students' current educational attainment and career planning [Retrieved from https://eric.ed.gov/?id=EJ1039406]. Social Psychology of Education, 16(4), 21–30.

- Fox, J., & Schirrmacher, R. (2012). Art and creative development for young children [Retrieved from https://www.cengage.com/c/art-and-creative-development-for-young-children-8e-fox/9781285432380].
- Gee, J. (2013). Importance of prior knowledge to learning [Retrieved from https://news. illinoisstate.edu/2012/01/importance-of-prior-knowledge-to-learning/].
- Gibbens, B. (2019). Measuring student motivation in an introductory biology class [Retrieved from https://online.ucpress.edu/abt/article/81/1/20/91855/Measuring-Student-Motivation-in-an-Introductory].
- Glynn, S. M., Brickman, P., Armstrong, N., & Taasoobshirazi, G. (2013). Science motivation questionnaire ii: Validation with science majors and nonscience majors [Retrieved from https://doi.org/10.1002/tea.20442]. *Journal of Research in Science Teaching*, 48(10), 1159–1176.
- Granito, M., & Chernobilsky, E. (2012). The effect of technology on a student's motivation and knowledge retention [Retrieved from https://files.eric.ed.gov/fulltext/ED531152.pdf].
- Guido, R. (2013). Attitude and motivation towards learning physics [Retrieved from https: //arxiv.org/ftp/arxiv/papers/1805/1805.02293.pdf]. *International Journal of Engineering Research and Technology*, 2(11), 95–111.
- Gurses, A., Demiray, S., & Dogar, C. (2015). A design practice for interactive-direct teaching based on constructivist learning (idtbcl): Dissolution and solutions [Retrieved from http: //doi:10.1016/j.sbspro.2015.04.244]. *Procedia - Social and Behavioral Sciences*, 191, 44–49.
- Harding, S. M. (2019). Self-regulated learning as a predictor of mathematics and reading performance: A picture of students in grades 5 to 8 [Retrieved from https://journals.sagepub. com/doi/full/10.1177/0004944119830153].
- Hubert, B. (2017). Cognitive self-regulation and social functioning among french children: A longitudinal study from kindergarten to first grade [Retrieved from https://onlinelibrary. wiley.com/doi/full/10.1002/pchj.160].
- Hurst, B., Wallace, R., & Nixon, S. (2013). The impact of social interaction on student learning [Retrieved from https://scholarworks.wmich.edu/cgi/viewcontent.cgi?article=3105& context=reading_horizons]. *Reading Horizons: A Journal of Literacy and Language Arts*, 52(4), 375–398.
- Isaacs, L. A. (2013). Social constructivism and collaborative learning in social networks: The case of an online master's programme in adult learning [Retrieved from https://pdfs. semanticscholar.org/9b40/82a734a62e1ec9bfc89ebc91c1a52e4810b3.pdf].
- Kwan, Y. W., & Wong, A. F. L. (2014). The constructivist classroom learning environment and its associations with critical thinking ability of secondary school students in liberal studies [Retrieved from https://link.springer.com/article/10.1007/s10984-014-9158-x]. Learning Environments Research, 17, 191–207.
- Laurillard, D. (2012). *Teaching as a design science. building pedagogical patterns for learning and technology* [E-book]. Routledge.
- Lawson, M. A., & Lawson, H. A. (2013). New conceptual frameworks for student engagement research, policy, and practice [Retrieved from https://journals.sagepub.com/doi/10.3102/ 0034654313480891].

- Lemley, J. B., Schumacher, G., & Vesey, W. (2014). What learning environments best address 21st-century students' perceived needs at the secondary level of instruction? *NASSP Bulletin*, *98*(2), 101–125.
- Linnenbrink-Garcia, L., Patall, E., & Pekrun, R. (2016). Adaptive motivation and emotion in education: Research and principles for instructional design [Retrieved from https: //selfdeterminationtheory.org/wp-content/uploads/2019/11/2016_Linnenbrink-GarciaPatallPekrun_ClimateMotiveEmo.pdf]. *Behavioral and Brain Sciences*, 3(2), 228– 236.
- Llego, J. (2017). Classroom management approach of ste science teachers in region 1 philippines [Retrieved from https://www.onlinejournal.in/IJIRV3I3/314.pdf].
- Mbatha, S. (2015). The relationship between self-efficacy, motivation, and academic performance among students from various gender and generational groups [Retrieved from http://scholar.ufs.ac.za:8080/xmlui/bitstream/handle/11660/4592/MbathaS.pdf?sequence=1].
- Michaelis, J. (2015). The role of interest and motivation in science investigation and engineering design instruction [Retrieved from https://sites.nationalacademies.org/cs/groups/dbassesite/documents/webpage/dbasse_182819.pdf].
- Milner, A. R., Templin, M. A., & Czerniak, C. M. (2012). Elementary science students' motivation and learning strategy use: Constructivist classroom contextual factors in a life science laboratory and a traditional classroom [Retrieved from https://eric.ed.gov/?id=EJ913429]. *Journal of Science Teacher Education*, 22(2), 151–170.
- Mubeen, S., & Reid, N. (2014). The measurement of motivation with science students [Retrieved from https://files.eric.ed.gov/fulltext/EJ1086038.pdf]. *European Journal of Educational Research*, 3(3), 129–144.
- Mutlu, G., & Güler, C. (2017). Authentic instruction: Efl teachers' perspectives [Paper presented at the European Conference on Educational Research (ECER 2017) of the European Educational Research Association, Denmark, Copenhagen. Retrieved from http://www.eera-ecer.de/ecer-programmes/conference/22/contribution/41901/].
- Nasiriyan, A., Azar, H. K., Noruzy, A., & Dalvand, M. R. (2012). A model of self-efficacy, task value, achievement goals, effort and mathematics achievement. *International Journal of Academic Research*, *3*(2), 612–618.
- Ozerem, A., & Akkoyunlu, B. (2015). Learning environments designed according to learning styles and its effects on mathematics achievement [Retrieved from http://dx.doi.org/10. 14689/ejer.2015.61.4]. *Eurasian Journal of Educational Research*, *61*, 61–80.
- Panadero, E. (2017). A review of self-regulated learning: Six models and four directions for research [Retrieved from http://doi:10.3389/fpsyg00422].
- Parsons, J., & Taylor, L. (2012). Improving student engagement [Retrieved from http://cie.asu. edu/ojs/index.php/cieatasu/article/viewFile/745/162]. *Current Issues in Education*, 14, 1–32.
- Ruey, S. (2012). A case study of constructivist strategies for adult online learning [Retrieved from https://bera-journals.onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-8535.2009.00965.
 x]. *British Journal of Educational Technology*, 41(5), 706–720.
- Saeed, S., & Zyngier, D. (2012). How motivation influences student engagement: A qualitative case study [Retrieved from https://files.eric.ed.gov/fulltext/EJ1081372.pdf]. *Journal of Education and Learning*, 1(2), 12–17.

- Sever, M., Ulubey, Ö., Toraman, Ç., & Türe, E. (2014). An analysis of high school students' classroom engagement in relation to various variables [Retrieved from https://doi.org/10. 15390/EB.2014.3633]. *Education and Science*, 39(176), 183–198.
- Soyogul, E. C. (2015). Students' motivational beliefs and learning strategies: An investigation of the scholar development program [Retrieved from http://www.thesis.bilkent.edu.tr/ 0006876.pdf].
- Taylor, E. (2014). The correlation between self-efficacy and the academic success of students [Retrieved from https://core.ac.uk/download/pdf/58825904.pdf].
- Tuan, H. L., Chin, C. C., & Shieh, S. H. (2005). The development of a questionnaire to measure students' motivation towards science learning [Retrieved from http://www.ntcu.edu.tw/ chin/file/29.pdf].
- Tunca, N. (2015). The regression level of constructivist learning environment characteristics on classroom environment characteristics supporting critical thinking [Retrieved from https://files.eric.ed.gov/fulltext/EJ1076652.pdf]. *Eurasian Journal of Educational Research*, 60, 181–200.
- Wiliam, D. (2011). Embedded formative assessment. Solution Tree Press.
- Wood, R. (2019). Students' motivation to engage with science learning activities through the lens of self-determination theory: Results from a single-case school-based study [Retrieved from https://www.ejmste.com/download/students-motivation-to-engage-with-sciencelearning-activities-through-the-lens-of-7677.pdf]. EURASIA Journal of Mathematics, Science and Technology Education, 15(7), 8–29.
- Yildirim, M. C. (2014). Developing a scale for constructivist learning environment management skills [Retrieved from https://files.eric.ed.gov/fulltext/EJ1057216.pdf]. *Eurasian Journal* of Educational Research, 54, 1–18.
- Zeidan, A. H., & Jayosi, M. R. (2015). Science process skills and attitudes toward science among palestinian secondary school students [Retrieved from https://files.eric.ed.gov/fulltext/ EJ1158460.pdf]. World Journal of Education, 5(1), 14–24.
- Zhu, Y., & Leung, F. K. S. (2012). Motivation and achievement: Is there an east asian model? [Retrieved from https://link.springer.com/article/10.1007/s10763-010-9255-y]. International Journal of Science and Mathematics Education, 9, 1189–1212.