




Article

Correlations Between the Attitudes about Learning of After-School Club Students during School and the Teaching Quality of Elementary School Teachers

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Abstract: In this study, we investigated the correlations between the attitudes about learning of elementary students who attended after-school clubs and the teaching quality of their educators during school. Previously, scholars have focused on service quality and satisfaction from the point of view of the parents, while overlooking the attitudes of students and teachers. To investigate the correlation between student enthusiasm and teaching quality, we sent out a questionnaire survey, collected 343 valid responses, and tested the related data via regression analysis. From the teacher's point of view, this study can be divided into five constructs: learning interest, self-regulated learning, completing homework, interaction with the environment, and preparation for examinations. We also examined the correlations between each construct and teaching quality. We found that learning interest, homework assignments, environment interaction, and preparation for examinations had a positive correlation with the teaching quality of the elementary level teachers. Lastly, based on our findings, we made recommendations on how to improve teaching quality and leaning in the classroom.

Keywords: after school club; teacher's perspective; learning attitude; teaching quality; self-regulated learning

1. Introduction

Instead of going directly home from school, children need a supportive environment in which to start another round of learning at “after-school clubs” (ASCs) or “after-school programs” (ASPs). ASCs provide a wide range of services to help parents cope with many problems of the current stressful world, especially with reducing the negative effects of urban poverty on children. When children participate in ASCs, they not only experience enhanced academic achievement, and personal and social growth, but their parents also greatly benefit from their involvement. According to [CommonWealth Magazine \(2010\)](#), over 60% of students attend ASCs immediately after school. According to a Child Welfare League Foundation survey of intermediate grade medium-year elementary school students, up to 75% take advantage of after-school care, and up to 60% of students return home no earlier than 21:00 p.m. on week nights. Given its far-reaching influence on these students, in addition to classroom and family education, after-school care facilities such as the ASCs have become a third pillar of primary education that must not be overlooked. However, not all ASC teachers have specific professional training related to education or after-school care. In other words, any graduate from a

junior college or those with an equivalent educational attainment can be an ASC teacher. Are ASCs that suffer from inconsistent teacher qualifications appropriate for developing students' enthusiasm for learning? Past studies have focused more on their service quality (Liu and Huang 2017; Tsai et al. 2015; Su and Chin 2009). In addition, most scholars have investigated this essential topic only with regard to the parents' decision. However, the first motivation for our study was to explore how the students are impacted. There is a dearth of research focusing on whether students' attendance of after-school clubs has an impact on their attitudes about learning and its impact on the quality of education from the teachers' perspective.

ASCs provide a wide range of services to solve many problems faced by modern parents. Thus, it is essential that these organizations provide services that meet a wide variety of demands. Will they help or hinder teaching quality in the classroom? Although educators are not traditionally viewed as ASC customers, the service received by both sides is the same. As previously stated, in past studies, ASC quality is usually rated from the point of view of parents, while the teachers' and students' perspectives have been virtually overlooked. This is our second research motivation.

In addition to simply reading books and doing homework assignments, "learning" includes how an individual absorbs and understands various types of information, and how time-specific knowledge and common sense are enriched by his/her own efforts and study habits. Good learning habits must be developed early in life, and they require cultivation, with an emphasis on developing an enthusiasm for learning and the ability to absorb and apply knowledge (Huang 1992). Effective learning habits are not only a representation of the student's adaptability, they are also an essential component of life-long learning. With or without our recognition and awareness, it is during the elementary education years that some basic, fixed, and autonomous learning behaviors and patterns should be instilled. If this does not occur, it may lead to basic learning problems for children (Shen 2007). Our third research motivation is to determine how to establish a solid foundation, so learning will be efficient and productive. After developing proper enthusiasm, students may view learning as natural and practical as breathing. However, if students develop a negative attitude, they will have problems later in life when attempting to deal with more difficult and comprehensive content. Therefore, enthusiasm is the key to successful learning.

The purpose of this study is to investigate the attitudes of students who attend ASCs from an educators' perspective. It is our hope that the results of this research will help teachers and instructors to better understand the factors related to teaching quality, and how to most efficiently improve student learning. Most instructors who lack the opportunity to learn from their colleagues teach their students based on their own experiences. By sharing these experiences and their teaching progress with co-workers, educators are able to not only provide better programs and instruction to their students, but also come to understand more about their students' attitudes regarding learning. In conclusion, the research objectives of this study are as follows: (1) the goal is to evaluate the extent to which after-school clubs affect students' attitudes about learning based on observations by teachers; (2) clarify the correlations between ASC students' attitudes about learning and the quality of elementary school teachers; and (3) provide recommendations based on the research findings for improving government policy-making, improving the skill levels of teachers and increasing parents' participation in the educational process.

This study is organized as follows: Section 2 provides the literature review, and the data visualization and methodology are discussed in Section 3. The results are provided in Section 4. In Section 5, we present the conclusion, discussion, and recommendations for how to improve both the teaching quality in elementary schools and how to encourage positive student attitudes.

2. Literature Review

2.1. ASC

“After-school clubs,” which are also referred to as “Anqin classes” in Taiwan, were implemented a long time ago (Hyejoon and Zhan 2017). “After-school clubs” refer to places where students are taken care of after school before the parents get home from work. These clubs are quite common and continue to grow in popularity as a result of the rise in nuclear families. Students need a safe place to go before their parents get home from work. Therefore, ASCs are categorized as after-school care services. However, this is not the only function of these vital organizations in Taiwan. In terms of a child’s physical and mental development, a sense of security required for healthy character development only arises if long-term, integral intimacy is maintained between a child and the primary caregiver. The younger the child, the stronger this influence will be. Naturally, the parents and family members are the primary sources of a secure emotional environment. It is the right of every child to receive proper care to ensure healthy growth (Lee 2001). To prevent these rights from being sacrificed as a result of social changes, these clubs provide various formal and informal familial systems to support and enhance vital family functions. These care services have emerged because of an essential need in society. It is noteworthy that instead of being viewed as a replacement for parental care, the after-school clubs are seen as supplements for this temporary absence, because they can never replace the role of parents and the sense of security, satisfaction, and belonging that they provide.

Facilities that offer similar childcare services are labeled under various names in the market, such as after-school clubs, talent development classes, tutoring classes, education centers, after-school study groups, education–culture centers, and after-school care services for elementary school students. Lee (2001) has categorized these facilities into the following three groups:

1. Private enterprises: after-school clubs, study groups, and talent development classes, which are the most common cases.
2. Charities: such as the “Community After-School Care Support System” developed by the Peng Wan-Ru Foundation.
3. Elementary schools: facilities that provide the required educational services.

According to many empirical studies, high-quality ASCs have a significant and positive effect on students, particularly for low-income children (Tsai et al. 2015; Su and Chin 2009; Huang 1992; Posner and Vandell 1994, 1999). Durlak and Weissberg (Tsai et al. 2015) found that after-school programs increase students’ self-awareness and their love of learning. The students who participate in these programs also are better behaved and have shown academic achievement, especially those who are disadvantaged (Cheng and Jacob 2016). ASCs have been found to benefit children in many ways. For example, Hyejoon and Zhan (2017) argued that children in relative care and parental care have a better academic performance than those in ASCs.

2.2. Attitudes about Learning

According to Kimble (1967), students must approach education with a positive attitude before they can learn effectively, which is a product of socialization and will likely affect an individual’s response to new stimuli, situations, and people. Therefore, by understanding an individual’s attitude towards something, we can predict his or her response to it. This aspect of learning can be changed by education. According to Rosenberg and Hovland (1960), cognition, emotion, and behavior are the three components of attitude. Oskamp and Kleinke (1970) believe that these three elements are necessary for an observable and justifiable attitude response. In other words, cognition, emotion, and behavior are the three indicators of whether or not an attitude has been established.

Hovland et al. (1953) argue that the process of attitude change includes three steps, which are shown in their attitude change model, namely, attention→understanding→acceptance. In sum, the formation and change of attitude is a learning process triggered by external information. Through sensation and

perception, an individual internalizes, shapes, and modifies his/her own attitudes and values. Therefore, teachers must provide accurate information to help students correctly process these sensations and perceptions, and use a combination of methods including conditioned response, example demonstration, and persuasive communication to help students form or change specific attitudes (Wang 1989). If a laissez-faire policy is adopted, students might develop deviant attitudes when society is filled with various incorrect and inappropriate ideas. As previously stated, the development of attitudes about learning involves the cognitive, affective, and behavioral responses to and inclinations toward people, events, objects, and situations that occur during the learning process. Whether active or passive, these responses or inclinations can be formed and changed simultaneously, making cultivation and guidance meaningful (Lee 2005). In the information age, knowledge is updated and renewed every day. Facing the huge quantity of comprehensive and constantly changing data, enthusiasm for learning is the key to accurately and effectively selecting, absorbing, understanding, and using data, given that a positive attitude aids learning, while passivity hinders it. School can cultivate enthusiasm for learning through guidance measures (Zhang 1982), which can benefit students for life. For educators, it is as important that they help students develop a positive attitude about learning and the actual knowledge instruction.

Because one's attitude toward learning is a series of psychological processes with cognitive, affective, and behavioral characteristics, it cannot be quantified, but can only be evaluated and described through the explicit behaviors of students. During the process of learning, the explicit behaviors of students are manifold. Past studies often focused on explicit behaviors and defined the concept of a learning attitude more concretely to clarify and investigate its impact on future learning.

In this study, we divided the attitudes into the following five constructs: learning interest, self-regulated learning, homework assignments, interaction with the environment, and preparation for examinations, described as follows.

2.2.1. Learning Interest

According to Schiefele (1991), individual interest can be conceived of as a relatively enduring preference for certain topics, subject areas, or activities. Krapp (2005) shows that interest-based learning has many benefits related to self-regulated education and the quality of learning outcome. Hidi and Renninger (2006) introduce the four-phase model of interest development. Triggered situational interest at phase 1 refers to "a psychological state of interest that results in short-term changes in affective and cognitive processing". Maintained situational interest at phase 2 is defined as "a psychological state of interest that is subsequent to a triggered state that involves focused attention". Less-developed individual interest at phase 3 refers to "a psychological state of interest that a student begins to regularly generate through his or her own "curiosity". Well-developed individual interest at phase 4 indicates "a relatively enduring pre-disposition to engage with particular classes of content overtime". Therefore, it is clear that interest can sustain the student's learning behavior, which will affect, to a certain extent, the teaching quality. Teachers and students exchange thoughts and opinions in an interactive environment and process. When interest is piqued and students feel relaxed and receive appropriate guidance in an environment where teachers can constantly and tirelessly provide knowledge, students begin to enjoy the learning environment. Conversely, a negative environment for teaching and learning will definitely degrade students' attitudes and the efficacy of learning. In an empirical study on persistent learning intention in a Thai course, Watthanapas and Ye (2018) found that the students' attitudes affect their interest in learning, which in turn affects persistent learning intention. In "The Effects of Multiple Intelligences Teaching Module on Elementary Students' Learning Interest and Achievement", Lee and Liu (2014) argue that a certain teaching module can enhance the interest of third graders in their English classes, and students will be more likely to participate in classroom activities and develop a positive attitude, which will go a long way toward learning efficacy. Chen et al. (2013) analysis of an English reading class for second-year students at a junior college revealed that students appreciate self-learning very much, and that their interest in their academic studies increases significantly with this type of experimental teaching. In conclusion, one's interest in learning affects one's attitude about it, which stimulates persistent

learning intention, and thereby enhances learning efficacy and teaching quality. Therefore, we propose the following hypothesis:

Hypothesis 1 (H1). *Student interest and teaching quality are significantly and positively correlated.*

2.2.2. Self-Regulated Learning

Endedijk (2010) described self-regulated learning (SRL) as independent study and metacognition. According to Zimmerman (2000), self-regulated learning is a controlled behavior adopted by an individual to achieve a specific learning goal. In “Developing and Validating a Foreign Language Learner Autonomy Scale”, Huang and Wang (2015) tested over 2300 students to determine their motivation, strategy, and metacognition. Chen (2018) discussed the mutual effects and correlations of teacher–student interactions, as well as the impact of the curriculum. Hsu (2019) recommended the following four directions for research: (1) student self-regulated learning strategies, (2) situation-oriented teaching, (3) inquiry-oriented teaching, and (4) collaboration in the classroom. In “Student Self-Regulated Learning: The Role of Teachers”, Wu (2018b) suggested that teachers should encourage students to practice self-regulated learning through inspiration and stimulation. For example, they should set tasks and challenges to help their students develop competencies and obtain a sense of achievement when the task has been completed. The purpose of peer competitions is to stimulate self-motivation. In addition, external rewards will provide useful feedback for students. Lastly, motivation for students should be stimulated through guided instruction.

In conclusion, student motivation is a fundamental aspect of teaching, and incorporating self-regulated learning can help set a strong foundation for future academic success. It is vital for teachers to encourage learning at an early age and to help students develop self-regulated learning habits (Perels et al. 2009), particularly because this technique plays such a critical role in the ASC system. Therefore, we propose the following hypothesis:

Hypothesis 2 (H2). *Student self-regulated learning and teaching quality are significantly and positively correlated.*

2.2.3. Homework Assignments

Cooper (1989) defined homework as any task assigned by schoolteachers for students to complete during non-school hours. Even though educators agree that it contributes to enhancing academic achievement, skills, and responsibility, teachers’ lack of understanding regarding students’ views about it and their behavior toward it is still a critical problem (Hong et al. 2011). In elementary grades, homework assignments are a particularly important part of learning, because they give students an opportunity to practice or review class materials (Becker and Epstein 1982). Homework can serve as an everyday self-evaluation that allows students to become more aware of their academic insufficiencies and common mistakes. Students are then given access to real-time reinforcement and correction (Dettmers et al. 2010). In addition, homework is an opportunity for students to develop self-set standards and a sense of responsibility. Cooper (1989) used meta-analytical strategies to show that frequent homework assignments do more to help children achieve these goals than less frequent homework. Moreover, Trautwein et al. (2002) showed frequency of homework assignments to be positively associated with achievement in mathematics. However, it is a pity if homework is treated as simply a mechanical routine for students to rush through. According to many scholars (Trautwein et al. 2002), teachers have found that too much homework will overload students, which causes adverse effects on learning. In other words, homework load is a fine balance. Thus, we established the following hypotheses:

Hypothesis 3 (H3). *Homework and teaching quality are significantly and positively correlated.*

Hypothesis 4 (H4). *Homework load and teaching quality are in an inverted U-shaped relationship.*

2.2.4. Interaction with People and the Environment

The environment includes people, events, objects, and places. During the process of teaching and learning, in addition to interacting with parents, teachers, and peers, students also respond to and are inclined towards a specific learning environment and venue, depending on their own learning habits. Therefore, positive interactions with teachers and students, and the creation of an atmosphere that is conducive to learning can help enhance educational efficacy. In an empirical study of over 200 junior high school students, [Yang et al. \(2011\)](#) investigated learning communication, inquiry, thinking, association, usability, the degree of challenge, and the learning environment to develop a scale of effectiveness for interactive whiteboards in the classroom. In an empirical study of how course materials help enhance learning efficacy, [Chen and Chen \(2016\)](#) found that the incorporation of interactive learning videos helped to enhance the motivation of 124 sci-tech university students. While previous researchers have found that the interaction between people and the environment, and positive teacher–student interaction significantly impacts learning efficacy, in this study, we hypothesized the following:

Hypothesis 5 (H5). *Interaction between the student and his or her environment and teaching quality are significantly and positively correlated.*

2.2.5. Exam Preparation

Despite education specialists' recommendations for multiple types of assessment, unfortunately, the norm of "teaching to the test" persists, and students are required to take numerous examinations to assess their performance, given that the score is thought to be an objective indicator of learning efficacy. Most studies on examination behavior in recent years have discussed the effects of multiple assessments on learning efficacy. According to [Wu \(2010\)](#), there were significant differences in the learning attitudes of two groups of social studies elementary students, one of which adopted multiple teaching and assessment strategies, and the other who utilized traditional teaching and assessment. [Wu \(2018a\)](#) argued that assessment, interpretation of results, and score-integrated consideration can stimulate students' motivation and enhance their learning efficacy. According to [Wang \(2017\)](#), teachers are actively implementing various assessment methods to measure the academic achievements of students in order to categorize and rank them, so that they may better guide their learning. Therefore, students pursue higher scores on examinations rather than wishing to achieve something more substantial. Therefore, in this study, we hypothesize that the student's preparation for examinations determines his or her examination behavior. The examination score is a direct reflection of the teacher's skill level and the objective score reflects the student's learning efficacy in a particular subject. However, the test score and the student's level of preparation for the exam are interrelated, because whether or not a student prepares for the examination will affect his or her score. Thus, we hypothesized the following:

Hypothesis 6 (H6). *How students prepare for exams and teaching quality are significantly and positively correlated.*

2.3. Teaching Quality

[Garvin \(1984\)](#) defined the five approaches to quality, namely: (1) the transcendent approach, in which quality is an intuitive concept that is difficult to define, like "beauty" and "love"; (2) the product-based approach, in which quality can be found in the product's components and features; (3) the user-based approach, in which good quality products are associated with high customer

satisfaction; (4) the manufacturing-based approach where products that conform to superior design specifications are of good quality; and (5) value-based approach, for which products with extra value are of good quality (Perels et al. 2009). Because we measured teaching quality from the teacher's perspective in this study, we chose to adopt Garvin's manufacturing-based approach.

Hightower et al. (2011) defined teaching quality as a set of actions and activities that have a positive effect on student learning and development. According to Hackling and Fairbrother (1996), the four main principles for investigating teaching quality are as follows: (1) general terms must be used in teaching, and teaching must be defined as the teacher's enlightenment, operation, and management of student learning; (2) instead of merely viewing it as a classroom activity, teaching encompasses the school and course levels as well; (3) teaching must meet the student's needs and expectations, including those from different backgrounds; and (4) the conditions required for teaching excellence and student satisfaction should be the top propriety. Liu (2012) believes that investigating teaching quality from the teacher's perspective involves many different aspects. For example, a teacher's background knowledge, skills, professional development, conduct, professionalism, course preparation, classroom performance, engagement in related affairs, ability for self-review, and improvement are all important elements that must be considered when reviewing teaching quality.

While investigating learning efficacy at a swimming course, Lee and Chiang (2016) found that teaching quality positively affects learning efficacy and satisfaction. Lin et al. (2018) found that sensation and association in experiential teaching quality affect teaching satisfaction, which then affects loyalty. Huang and Chen (2016) established a teaching quality scale involving interaction and assessment, teaching enthusiasm, and professional competence to measure hairdressing teaching quality. Wu et al. (2019) investigated the teaching quality of physical education from a service quality point of view to identify any insufficiencies. After dividing schools in Kaohsiung City into the southern and northern districts, Ku et al. (2017) investigated the teaching quality of physical education in terms of five constructs: "teaching performance", "professional competence", "resource utilization", "teaching assessment", and "teacher-student interaction". They found that lack of space and sports equipment in schools negatively affected the teaching quality of physical education in junior high schools.

The above studies show that teaching quality and learning efficacy are correlated. Particularly, teacher-student interaction has the most significant effect in most cases. In sum, teaching quality fills any gaps between the teaching plan and the actual instruction. If the teaching goes exactly as planned, teaching quality is excellent. If it goes contrary to the plan, problems can arise.

3. Research Methods

3.1. Data and Sampling

According to statistics from the Ministry of Education (www.gender.ey.gov.tw), in 2019, 60% of students in the northern region of Taiwan participated in after-school programs. We randomly selected 30 public elementary schools from a total of 538 elementary schools in this area. We divided these schools in Taiwan into small, medium, and large schools based on the number of classes. Schools with 48 or more classes were defined as large schools, to which 20 copies of the questionnaire were distributed. Schools with 24–47 classes were termed medium, to which 15 copies of the questionnaire were distributed. Schools with 23 or fewer classes were defined as small schools, to which 10 copies of the questionnaire were distributed. Therefore, 500 surveys were distributed randomly among the 30 schools that had been selected before. The respondents of this study were teachers. The total valid data have 343 responses, with a rate of 68.6%. We applied the Likert five-point scale to assess the respondents' level of agreement to an item from 1 to 5 points: (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, and (5) strongly agree.

3.2. Descriptive Statistics

The results show a ratio of 14.9% male and 85.1% female, indicating that female teachers significantly outnumbered male teachers in this study. Most of the teachers were age 41 to 50 (49.6%), 125 respondents (36.4%) were age 31–40, 8 respondents (4.1%) were under 30, and 34 respondents (9.9%) were age 51 or over. Regarding seniority, 163 respondents (47.5%) had 11–20 years of experience, 102 (29.7%) respondents had 21 years or more seniority, 59 respondents (17.2%) had 6–10 years of experience, and 19 respondents (5.5%) had seniority of five years or less. In addition, 35.6% of respondents taught lower grades, 33.2% taught medium grades, and 31.2% respondents taught higher grades. For educational attainment, we found that most respondents had a bachelor's degree (57.1%), 144 respondents (42.0%) had a master's degree, 2 respondents (0.6%) had a Ph.D. degree, and 1 (0.3%) marked other educational attainments. Most schools in the survey (57.14%) were classified as medium-sized, with 24–47 classes; 129 schools (37.61%) were considered large, with 48 or more classes; and 18 schools (5.25%) were considered small, with 16 or less classes.

4. Results

4.1. Factor Analysis

The minimum of the “factor loadings” value in this research was the generally accepted value for scales greater than 0.50 to complete loading on the factor. In Table 1, Cronbach's alpha of learning interest and self-regulated learning were 0.726 and 0.670, respectively. In addition, Cronbach's alpha of homework assignments was 0.688, environment interaction was 0.652, exam preparation was 0.701, and teaching quality was 0.686. The overall Cronbach's alpha was 0.830, which indicates the satisfactory level of reliability (Nunnally 1978). According to Kaiser (1960), we proposed the 1.0 cutoff of eigenvalues in the factor analysis. The factor analysis in this study was defined and analyzed with a varimax rotation to determine the overall explained variance, which was as follows: learning interest: KMO (Kaiser-Meyer-Olkin) = 0.651, Bartlett test $p = 0.000$, 39.954%; self-regulated learning: KMO = 0.639, Bartlett test $p = 0.000$, 60.758%; homework assignments: KMO = 0.697, Bartlett test $p = 0.000$, 33.541%; environment interaction: KMO = 0.672, Bartlett test $p = 0.000$, 50.484%; exam preparation: KMO = 0.681, Bartlett test $p = 0.000$, 32.024%; teaching quality: KMO = 0.659, Bartlett test $p = 0.000$, 61.639%. The reliabilities of this analysis range from 0.639 to 0.697, which is recommended by Kaiser (1974) as the borderline of acceptability. The summary of the factor loadings and reliability analysis in this study is shown in Table 1.

Table 1. Factor loadings and reliability analysis.

Construct.	Item	Factor Loadings	Eigen Value	Variation %	Cronbach's α
Learning Interest	Students talk about interesting things at the ASC.	0.767	1.998	39.954	0.726
	Students complain about ASC teachers.	0.706			
	Students say they don't want to go to the ASC.	0.533			
	Students show off the prizes or small gifts they receive from the ASC.	0.761			
	Students praise or thank their ASC teachers.	0.665			
Self-Regulated Learning	ASC students know how to solve problems by using reference books.	0.748	1.823	60.758	0.670
	ASC students read lots of books to enrich their extracurricular knowledge.	0.834			
	In addition to school and ASC homework, students do extra exercises.	0.754			

Table 1. Cont.

Construct.	Item	Factor Loadings	Eigen Value	Variation %	Cronbach's α
Homework Writing	ASC motivates students to hand in homework assignments on time.	0.715	2.012	33.451	0.688
	Students write out their homework assignments neatly through the ASC's guidance.	0.606			
	ASC's guidance can help students to do their homework correctly.	0.737			
	Students usually have the same type of homework assignments at school as they have at the ASC.	0.568			
	Students of the same ASC often give similar answers to open-ended questions.	0.638			
	ASCs transform creative homework assignments into copying work.	0.533			
Environment Interaction	Parents check homework that students complete at the ASC.	0.551	2.019	50.484	0.652
	ASC students discuss homework with other students.	0.762			
	ASC students often ask their teachers questions.	0.825			
	ASC students speak to teachers more politely than do the other students.	0.675			
Exam Preparation	Students worry about meeting the requirements of ASC teachers and doing well on the examinations.	0.598	1.921	32.024	0.701
	Students would rather review ASC examination papers than read their textbooks and review homework assignments from school to prepare for the school examinations.	0.575			
	ASC students check their answers after an examination.	0.592			
	ASC students can easily avoid traps in the questions after doing many practice exercises at the ASC.	0.738			
	ASC students try to figure out why they got wrong answers in a humble manner.	0.595			
	ASC students often compare their own scores and ranks to those of others.	0.695			
Teaching Quality	Because some students finish their homework at the ASC, it is difficult for teachers to capture the actual learning conditions and levels of their students.	0.742	1.849	61.639	0.686
	As ASCs use different teaching methods, teachers will sometimes need to correct their students' problem-solving methods and misinformation about a subject.	0.804			
	ASCs circulate examination papers, making it difficult for teachers to share examination papers with other classes in tests.	0.808			

4.2. Correlation Analysis

The scores stored from the factor loadings of each construct, including the mean, standard deviations, and correlation coefficients of the five variables, show that the collinearity of each independent variable falls within an acceptable range, as shown in Table 2.

Table 2. Mean, standard deviations, and correlation coefficients.

Independent Variable		Mean	Standard Deviation	Learning Interest	Self-Regulated Learning	Homework Assignments	Environment Interaction
1.	Learning Interest	11.0821	2.36662				
2.	Self-Regulated Learning	5.9856	1.74234	0.291 **			
3.	Homework Assignments	15.0476	1.89716	0.213 **	0.048		
4.	Environment Interaction	8.3104	1.66457	0.272 **	0.598 **	0.165 **	
5.	Exam Preparation	13.5192	2.07761	0.247 **	0.300 **	0.458 **	0.407 **

Note: ** $p < 0.01$; $n = 343$.

4.3. Related Test for Regression Analysis

To determine if the dataset is well-modeled by a normal distribution or not, the testing of normality was conducted. According to the normal probability plot shown in Figure 1, the dataset followed a straight line, which confirms that the data are approximately normally distributed. In addition, the K–S (Kolmogorov–Smirnov) test method and scatter diagram, which were used to compare a sample with a reference probability distribution, had the following results: the K–S test was $0.086 > 0.05$ with a p -value > 0.000 . We also used the Durbin–Watson method to test the autocorrelation in the residuals of the regression analysis and to determine if the error terms were independent of each other. The acceptable range of the DW value was between 1.5 and 2.5 (Hutcheson and Sofroniou 1999). The Durbin–Watson value of our model was 1.745, indicating that there was no autocorrelation among the error terms, and all of them were independent.

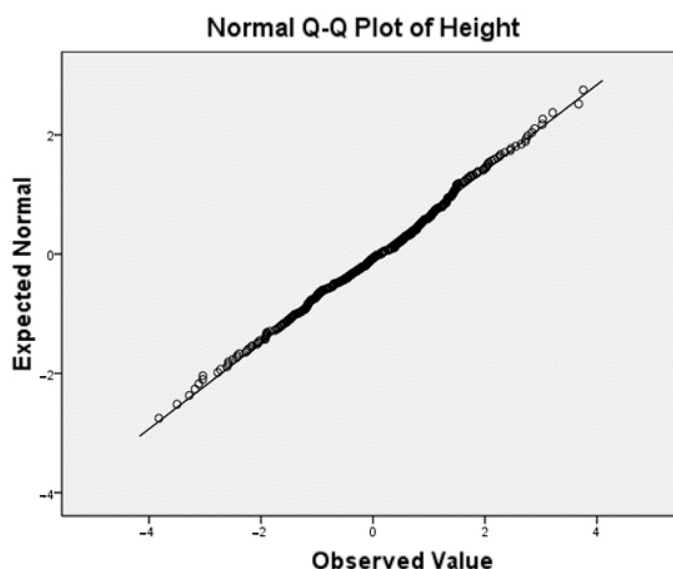


Figure 1. Normal probability Q–Q plot.

Furthermore, in this study, the scatter diagram, shown in Figure 2, was used to determine how closely the variables were related. The closer to zero, the closer the data are to following the normal distribution.

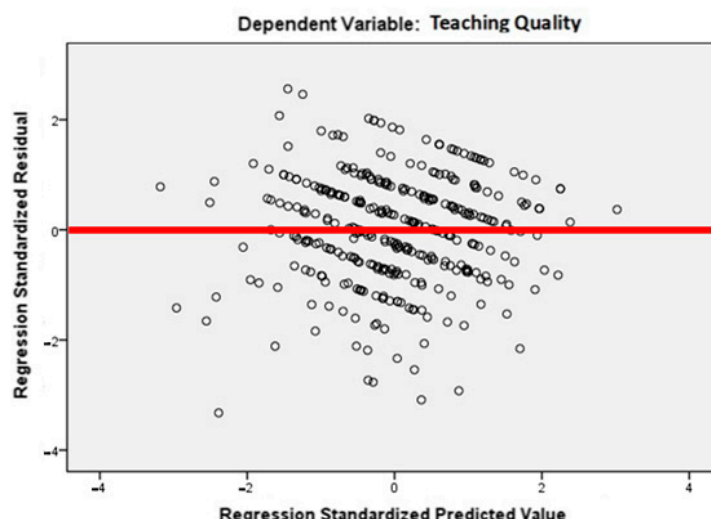


Figure 2. Scatter plot.

4.4. Regression Analysis

Two regression models were built to investigate the correlations between the variables and teaching quality. Model 1 included only the first five factors, while model 2 included the new homework load variable.

According to Table 3 and Figure 1, $\beta_1 = 0.225$ ($t = 4.252, p < 0.001$), and Hypothesis 1 was proven to be valid. School teachers believe that after-school classes can inspire students to develop a strong interest in learning, which can boost the teaching quality of educators. In particular, teachers believe that ASCs can help students gradually develop an interest in learning and good study habits. We found that these students tended to show positive attitudes about classroom activities, which can inspire a deep desire to learn, and, thus, enhance the quality of their educators.

Table 3. Regression analysis of constructs vs. teaching quality.

Dependent Variable	Teaching Quality					
	Mode	Mode 1			Mode 2	
Independent Variable	β	t-value	VIF	β	t-value	VIF
Learning Interest	0.225	4.248 ***	1.171	0.225	4.252 ***	1.171
Self-Regulated Learning	-0.053	-0.837	1.648	-0.051	-0.817	1.649
Homework Assignments	0.214	3.874 ***	1.278	0.211	3.794 ***	1.287
Environment Interaction	-0.237	-3.697 ***	1.720	-0.237	-3.695 ***	1.720
Exam Preparation	0.215	3.651 ***	1.455	0.214	3.631 ***	1.456
Homework Load				0.037	0.759	1.012
F-value		17.163			14.381	
R ²		0.205			0.207	
R ² adj		0.193			0.192	

Note: *** $p < 0.001$.

$\beta_2 = -0.051$ ($t = -0.817, p > 0.05$); therefore, Hypothesis 2 was found to be invalid. That is, after student participation in ASCs, teachers found that self-regulated learning had no significant correlation to teaching quality, because the students remained in the learning encouragement and guidance assistance phases in terms of the learning process.

Hypothesis 3 was supported as, $\beta_3 = 0.211$ ($t = 3.794, p < 0.001$). In other words, after student participation in ASCs, teachers believe that when students complete their homework assignments,

this has significant positive effects on their quality of teaching. Generally, teachers approve of the ASC's effort to help students with their homework, because this reduces the teachers' workload and gives them more time for planning and designing various classroom activities that improve teaching quality and learning.

Hypothesis 5 was proven to be valid, as $\beta_4 = -0.237$ ($t = -3.695$, $p < 0.001$). Teachers believe that an interactive environment enables students to actively participate in learning, and can improve student performance, encourage discussions with other students, and inspire good study habits.

$\beta_5 = 0.214$ ($t = 3.631$, $p < 0.001$); therefore, H6 was supported. In other words, according to teachers, students who participate in ASCs were better prepared for examinations, which positively affected their teaching. However, although students would be more likely to take examinations seriously, which would help improve teaching quality, their greater understanding of examination questions would create significant adverse effects on teaching quality.

In addition, mode 2 shows that $\beta_6 = 0.037$ ($t = 0.759$, $p > 0.05$); therefore, Hypothesis 4 was shown to be invalid. That is, from an educational perspective, we found that for students who attended ASCs, the homework load did not present an inverted U-shaped relationship in terms of quality of education. In other words, students need to improve their academic results through homework, writing, and general guidance. Homework load was not shown to have a clear critical point. Therefore, teachers should determine homework load based on classroom progress. In addition, this factor did not present an obvious inverted U-shaped relationship with teaching quality. All variance inflation factor (VIF) values in both models were under 10, which means that the multicollinearity problem was not serious (O'Brien 2007).

4.5. Discussion

4.5.1. Learning Interest

Learning interest will promote the cultivation of learning in students, thus enhancing the teaching quality. This conclusion is consistent with the findings of [Watthanapas and Ye \(2018\)](#) and [Lee and Liu \(2014\)](#). These clubs strive to encourage students to continue learning through external rewards and by encouraging their interests. Teachers should pay more attention to kindling the learning interest and curiosity of the students in designing the curriculum, and attempting to make the learning environment enjoyable for the students in the process, all of which will boost the teaching quality.

4.5.2. Self-Regulated Learning

The goals and challenges of teachers are to help student develop their capabilities. In the process, while activities might increase the learning motivation in students, and self-learning might indicate the dedication of the students, they might not necessarily help improve the teaching quality. As such, self-regulated learning does not determine the teaching quality. This study found that self-regulated learning did not affect the quality of teaching; this finding is not consistent with the results of [Wu \(2018b\)](#). Although this factor was found not to be correlated to teaching quality, it can promote a positive attitude in students with regard to learning. Because the development of self-regulated learning is a slow process, it was not significantly correlated with classroom teaching quality. However, it is imperative that parents continue to encourage this aspect in their children. Although it may not necessarily affect teaching quality directly, it can improve the student's attitudes about learning and classroom performance.

4.5.3. Homework Assignment

In after-school clubs, children also can be further instructed to ensure that homework assignments are completed and submitted on time ([Cosden et al. 2001](#)). We once again confirm the findings of [Becker and Epstein \(1982\)](#), that homework plays an important role in learning, such that homework can help students discover their common mistakes and underperformance in their self-learning.

Teachers should give appropriate homework assignments to students in accordance with the curriculum. The process of doing their homework assignments can promote the student's learning results, leading to a better teaching quality.

[Trautwein et al. \(2002\)](#) argued a positive correlation between the frequency of homework and academic results, and mentioned that the overload of homework will deteriorate the learning result. From previous findings, we note that although each scholar draws conclusions from one's perspective, and there might be a positive or negative correlation between the workload of homework and the academic result, no inverted U-shaped relationship was found. Moreover, the standard scope of the workload of homework cannot be determined. As such, whether it poses an inverted U-shaped relationship with regard to the teaching quality cannot be determined either. For teachers, the workload of homework is not important. To be able to actually help the students, they should pay attention to the progress of the curriculum and how compatible the content of the homework assignments is to the curriculum.

Therefore, we recommend that teachers should focus on their students' academic progress and determine the homework load accordingly. As homework assignments aid in comprehension and memory, students are better able to recall the relevant contents learned in classroom. Therefore, rather than highlighting the homework load, teachers should focus on course design, mastering their teaching progress, and giving assignments that will complement what is learned in class.

4.5.4. Environment Interaction

In addition, the interaction of humans and their environment has an impact on teaching quality, which is consistent with the results of [Yang et al. \(2011\)](#) and [Chen and Chen \(2016\)](#). Teachers should strengthen the level of interaction in the teaching process, so as to enhance the involvement of the students in the curriculum. Environment interaction in the teaching process is helpful in determining teaching quality. The classroom should be a fun, joyful place where students look forward to learning. Teachers can make students enjoy the learning environment with out-of-school social activities. These activities show positive effect, which links to education attainment of children ([Siddiqui et al. 2019](#)).

4.5.5. Exam Preparation

Parents can take over many of the duties that the teachers fulfil at the clubs, such as encouraging students to work on exercise tests, deciding on the optimum number of exercises to be completed per week, and the determining the most challenging subjects for their children and monitoring the type and number of mistakes made.

This conclusion is in line with the findings of [Wu \(2018a\)](#) and [Wang \(2017\)](#), where exam preparation will galvanize the learning motive in students and hence improve their learning result. Even if parents are not sufficiently versed in the subjects, the available practice exercises often come with answer sheets. They may also consult with teachers on how to best answer questions and explain content.

4.5.6. Teacher and Parent Perspectives

Actually, after-school teachers can monitor academic status on behalf of the parents and can provide guidance at any time. There is another battlefield for after-school club continuous learning classes. In addition to comparing the overall academic test scores, the clubs also have testing mechanisms to monitor student learning results and to provide analyses based on these results (of the test scores). Students are provided with exercises to enhance their knowledge of certain subjects and to prevent them from making the same mistakes when encountering the same questions in the future. Teachers are responsible for monitoring learning progress, consulting with parents if students have fallen behind, and providing suggestions for keeping them on the right track.

The best teachers will consider background knowledge, enthusiasm, and have the skills to make the materials interesting ([Cochran-Smith 2003](#)). They will always take the physical and mental development of elementary school students into account, and be able to demonstrate familiarity

with the curriculum and educational materials. Moreover, they ought to be encouraged to provide students with indirect guidance instead of straightforward instruction. This would help parents, because their children would be encouraged to attend these clubs where they would gain access to more resources (extensive academic exercises, various supervision mechanisms, incentive educational methods, contact with peers, etc.), which will enable them to master the learning process faster. However, if the parents cannot afford after-school clubs, the same mechanisms can be used to promote academic success from in-home classes. For example, many bookstores are selling test assessments or exercises.

In addition to increasing the number of practice exercises, parents should pay close attention to their children's attitudes about learning as a whole, encourage them to ask questions to clarify any confusion, and shape the students' interactive skills in the classroom. Parents can also use reward mechanisms to encourage their children to learn. They can consult with teachers via software to verify their children's academic progress. Parents and relatives should keep track of their children's educational progress by asking them about what they learned, and sharing their love of learning by helping them with homework. Furthermore, parents should stop focusing exclusively on their children's standardized test scores, and instead emphasize developing a positive attitude about learning in general.

Based on the findings discussed above, we believe that the learning process mechanism is the key factor that has the most significant effect on students. However, schools are only a poor substitute for and can never totally replace the nurturing effects of family members. However, not every family can afford the luxury of after-school clubs. Students from relatively wealthy families frequently attend after-school clubs to enhance their academic performance. Thus, teachers and parents must stress it to improve academic performance. Developing an interest in learning, completion of homework, writing, and creating an interactive learning environment are the factors that can best help to improve learning quality and guide students towards a life-long love of learning.

5. Conclusions and Recommendations

5.1. Research Conclusions

After-school clubs or "Anqin classes" in Taiwan are a worthy investment in society, as they not only help students enhance their social, emotional, and academic development, but also reduce some of the negative effects of modern life.

Without a doubt, ASCs can help students improve their routine work. However, we found its helpfulness in preparing for examinations to be only fair, and interactions with the environment and its ability to stimulate learning interest only just passable, while its performance in promoting self-regulated learning in students was found to be the least ideal. Therefore, there is huge room for improvement to enable the ASC to inspire students.

ASCs can encourage a love of learning, which will go a long way to improve teaching quality. Teachers believe that students who attend after-school clubs have a higher interest in learning due to the educational process promoted at these clubs. From an educational perspective, the foundation of continuous learning is ideal for creating an academic mentality and enjoying the learning process, which is essential for teaching quality.

Our findings show that although self-regulated learning is crucial for academic achievement, it is not correlated with teaching quality. Also, homework load is not significantly correlated with this essential factor. In contrast, the development of an interest in learning, completing homework assignments, positive classroom interaction, and preparation for exams are highly correlated with teaching quality.

5.2. Limitations and Future Study

In this study, we developed a scale via factor analysis, and verified the correlations between teaching quality and learning interest, self-regulated learning, homework assignments, interaction with the environment, and preparation for examinations. However, we did not utilize structural equation modeling (SEM), because the scale was not intended for long-term verification. SEM, which is usually developed based on a given scale, is intended for repeat verification and for use with static items (e.g., PZB's SERVQUAL). We adopted a factor and regression analysis, and we invite future scholars to use the same scale developed in this study.

We investigated learning interest, self-regulated learning, homework assignments, interaction with the environment, preparation for examinations, and teaching quality. We encourage future scholars to investigate, through in-depth research, other variables, such as if positive psychology and teaching style affect teaching quality. In addition, because of the limitations of time, finances, and labor, we only surveyed public elementary schools in Taiwan. Future researchers may wish to expand the scale of the study.

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