

Teamwork and Teachers' Engagement: A Mediating Roles of Work Condition and Professional Development in Public Schools

Myrna B. Sario, MA and Roel P. Villocino, EdD

University of Mindanao Professional Schools, Matina, Davao City, Philippines

Abstract:- In Region XI, this study found that teamwork and teacher engagement had mediating roles between work condition and professional development. A sample of 465 secondary teachers was used in a descriptive correlational research design. For the required data, both online and offline improved and validated survey questionnaires were used. The gathered pieces of evidence were scrutinized using the Mean, Pearson-r, and Path Analysis as statistical tools with the following results: level of teamwork was high, level of teacher engagement was high, level of work condition was high, and, level of professional development was high. Moreover, results revealed a significant relationship between teamwork and teacher engagement in relation to work condition and professional development. A mediation of teamwork and engagement in the relationship between work condition and the professional development of secondary teachers in Southern Mindanao was proven in the study. Programs and activities that may reinforce secondary teachers about engagement, teamwork, work condition, and professional development as these are equally essential variables for better teaching performances in the schools where secondary teachers belong are some implications of the study.

Keywords:- Educational management teamwork, teachers' engagements, work conditions, professional development, mediating effect, secondary school teachers, Philippines.

I. INTRODUCTION

Teachers' engagement, in whatsoever circumstance, is of crucial importance for organizations like schools. Engaged teachers must be empowered, take control over events, and can actively adjust their environments to preserve their work (Van Wingerden & Poell, 2019). However, Zhao et al. (2019) pointed out that teachers are seen as problematic with impaired well-being, and are linked with low levels of professional expansion and performance when challenged in many areas of their lives. According to Fute&Oubibi (2022), engagement and mental health are issues for China's teachers, especially during the pandemic. Teachers must work together in a psychologically dynamic environment if they are to remain committed and resilient in their work despite challenges.

There have been many initiatives that have focused on the importance of engagement. Engagement offers a window into how the environment affects teachers' well-being at work (Cherkowski et al., 2022). According to Guhao and Quines (2021), engagement is distinct from the output; it may be a fume but it's not a fire. Although it may increase productivity, it is not a product, so even if teachers are enthusiastic and involved, there will be no enhancement in the outcomes without the proper leadership, tools, and other factors. Teacher engagement is thought to be related to professional consciousness (Fute et al., 2022).

One aspect that impacts teacher engagement is teamwork. According to Jard et al. (2022); Quines & Piero (2022), teamwork fosters respect that frequently improves engagement. Teacher engagement can profoundly impact the retention and loyalty of employees in the school organization (Al Hawamdeh, 2022).

Moreover, work conditions are positively linked with engagement. Teachers learn by interacting (Leite&Havu-Nuutinen, 2022). Work condition favors a more excellent state of mind toward their work and improves their professional lives by fostering development between teachers and their peers and students (Coelho et al., 2023). The Cai et al., (2022) study disclosed that work condition provides teachers with useful resources to increase and develop further affiance in their toil. Resources and responsibilities create a school culture that stimulates confidence and engagement.

The study on teamwork, engagement and work condition as a framework for professional development is done out of the country. There hasn't been any research on how secondary teachers' work condition and professional development affect teamwork and teacher engagement in Region XI. The researcher hoped to discover relevant variables associated with teacher engagement in the Philippines. It is also intended to generate desirable programs to support teacher engagement in professional development.

This study identified how teamwork, teacher engagement, work environment, and professional development play mediating roles in public schools. Its specific objectives are: to identify the degree of teamwork in terms of communication, leadership, situation monitoring, and team structure. Secondly, to ascertain the engagement level of teachers in terms of cognitive, emotional, social, and psychological. Thirdly, to describe the work condition of public secondary school teachers in terms of

professionalism, teaching instructions, school community supports, and safety. Fourthly, assess the level of professional development that secondary school educators in Region XI have in terms of developing and delivering curricula, accommodating student differences, problem-solving, and instructional strategy. Fifthly, to determine the significant relationship among variables associated with professional development in terms of teachers' teamwork and engagement, teachers' teamwork and work conditions and teachers' teamwork and professional development, teachers' engagement and work conditions, teachers' engagement and professional development. Lastly, find out the level of significance of teamwork and engagement mediated with work conditions and professional development.

II. REVIEW OF RELATED LITERATURE

A. Teamwork

In an organization, employees must collaborate. Teamwork is the attitude and spirit that helps an organization perform better (Martono et al., 2020). It can be enhanced by encouraging colleagues to actively participate in groups, dividing them into smaller groups so they can collaborate while supporting one another, and holding them accountable when their work is ineffective. Team members can take part by developing a concrete plan for the company (Irshad et al., 2021). The school industries must compel their clientele to participate in various celebrations to maximize resources. Achievements come from keeping a winning attitude and acknowledging and taking part in all significant events (Chakraborty et al., 2020; GULATI, (2022).

B. Teacher Engagement

The mental, emotional, psychological, and behavioral effort an employee makes to support the organization's objectives is referred to as teacher engagement. It measures how individuals feel a sense of connection and relatedness as well as their general interpersonal interactions, according to Khodakarami and Dirani (2020). Some of the most important predictors of a sense of belonging, happiness, and satisfaction include gender differences and the workplace. It also refers to a method of organization and the impact on workers' well-being at work (van Zoonen et al., 2023).

According to Guhao & Quines (2021), engagement may be a smog but not a fervor in terms of yield or efficiency; it may support but not significantly subsidize. This suggests that even if an employee is emotionally invested in and fully committed to the task, the outcome will still be insufficient without precise leadership, resources, and support (Imam et al., 2022). Additionally, a growth mindset and work engagement are facilitated by well-being and persistence, which should be taken into account (Zeng et al., 2019).

C. Work Condition

Work condition, defined in the simplest form are the settings, situations, conditions and circumstances under which people work. As further elaborated by Johnson et al., (2020) work condition serves as a very broad category that encompasses the physical setting, characteristics of the job itself, broader organizational features, and even aspects of the extra organizational setting. Zubairu & Oyekale, (2021) expounded on workplace environments as a composition of three sub-environments: environment, the human environment, and the organizational environment of many components and factors affecting both the physical and psychological well-being of workers.

D. Professional Development

Professionalism may be a surprising device for improving the capacity of school leadership. Little is known about professionalism as it relates to the unique work of school leaders, but understanding more about it could lead to greater knowledge of how to encourage and retain them. In the current context of uncertainty, chaos, and change, the pressure on leaders to stay in their role and to succeed has never been greater. Principals' efforts are exerted professionalism for greater elements of it (Stone-Johnson & Weiner, 2020).

Professional development is essential for teachers' competence, paying special attention to larger-scale, structured, and formal interventions. This is because teachers' communities are crucial for teachers' life-supportive leadership, group dynamics, composition, and mutual trust and respect (England et al., 2023). It could not be denied that modern society demands excellent teaching and learning capacities of teachers, which is why they have to possess a great deal of knowledge and skills in teaching and assessment practices to meet the demands and standards of quality education. To develop these core skills, teachers should be equipped and gradually apply effective teaching-learning processes to their learners. If the teachers have a sound professional background and knowledge, they can effectively use the various instructional practices in the classroom and other related functions (Oo, et al., 2021).

E. Theoretical Framework

This quantitative study is anchored on the Work Engagement Theory of Kahn (1990) or the Total Employee Experience (2017) which elaborates that employee engagement is the extent to which a person expresses self-preference in tasks to foster connections between self and teaching through cognitive, social, psychological, and physical self-investment. Khan's theory followed the framework that can help to teach force to feel happy, satisfied, cared for, valued, respected, and trusted in their workplace.

Engaged workers are involved in psychological, cognitive, social, and emotional levels. Employees who have a high level of engagement are more willing to put extra effort into their work, and they are also found to be more creative and productive (Fairlie, 2017); Frino, E. (2022). Supportive work environments, where managements show concern for employees and allow

employees to voice their thoughts and feelings are core determinants of a high level of engagement. Further, employees who have supportive relationships with co-workers experience higher engagement levels because they feel safe trying new things without fear of the consequences (Jones, 2018); (Othman & Mahmood, 2019). As Rais & Rubini (2022) added that teachers' engagement that emphasizes teamwork, development opportunities, and level of performance can improve the quality of teacher services. Employees want to feel connected to their colleagues and managers, to feel their work has meaning and impact on the company, and to be appreciated for the work they do (Ningsih, et al., 2023). Teaching and learning are ultimately social processes (Vygotsky, 1978) hence, teachers are wired to connect (Goleman, 2006).

The theory went on to suggest that one aspect of learning to become a teacher is supported by the capability to interpret, act, and interact in the workplace while also having the ability to question meanings and social practices. Supporting teachers involves looking for complexity in learners and tasks, identifying resources, and helping them manage their relationships with the social contexts of their development (Edwards, 2010). Work condition is one of the aspects which stimulate personal growth and achieving work goals. It is deemed necessary and beneficial for both employees and organizations (López-Núñez, 2020); Wang et al., 2020).

The first proposition in this study is on teamwork which is anchored on the study of Hagstrom, W. O. (1964) who stated that scientific teamwork consists freely of collaborating peers or teachers and their students. As added by Lo, Y., (2019), teachers through collaboration gain numerous advantages such as moral support, sharing workloads, eliminating duplication, and increasing collective confidence regarding innovations. Teachers' satisfaction is significantly wedged by the workplace environment, administrative control, teaching ability, and organizational culture (Ma & Mac Millan, 1999).

The other claim is related to professional development and is based on Vygotsky's socio cultural theory (SCT), which contends that what Vygotsky asserted about students' learning in the classroom also applies to teachers and that Vygotsky's developmental theories, which are based on the idea that mental functions have social origins, can be used to understand the development of teachers in their workplaces and have various implications for designing and implementing teacher professional development programs. (Shabani, 2016). Being a professional teacher entails engaging in continuous learning. Teachers' main concern is assisting and guiding students as they learn.

In light of this, policymakers cannot solely dictate how to teach and develop their teachers. The participation of teachers must be a foundation for ongoing learning and reflection about education. Through increased awareness and a growing body of knowledge, teachers' professional development aims to elevate their status. Regulations, according to Hargreaves (2000), made the path to teachers'

professionalism more difficult. It is a call to pursue professionalism based on teacher involvement.

As a result, teamwork, engagement, and working conditions encourage teachers to feel like they are developing and as a result, have an impact on the conception and development of professionalism.

F. Conceptual Framework

The conceptual model demonstrates the mediating effects of work conditions and professional development on the relationship between teamwork and teacher engagement as supported by the theories.

Illustrated in Figure 1 is the conceptual framework demonstrating the associations of the variables. A conceptual model of engagement, which is the dependent variable based on Klassen, et al., (2013) has cognitive, emotional, social, and psychological indicators.

In this study, cognitive can be understood as teachers giving their students their best intellectual effort. In contrast to the teachers' emotional and volitional processes, it deals with the mental functions of perception, memory, judgment, and reasoning.

Furthermore, cognitive thinking is the mental process that people use to reason, pay attention, read, learn, remember, and ultimately comprehend information and transform it into knowledge. Then, educators can decide and do something with this knowledge. While still finding enjoyment in their work, teachers who are emotionally connected to their students' needs are better able to connect with them. Highly emotional educators frequently have a profound sense of self-awareness and compassion, but they may also feel worn out from constantly experiencing all the feelings.

Additionally, social implies that teachers have friendly relationships with their colleagues and students. It is their organized way of relating to society and living together; relating to activities with which teachers meet and spend time; relating to society and living together. The term psychological refers to something that affects or arises in the mind; it is related to a person's mental and emotional state. It is the pattern by which teachers deal with various situations. Teachers are described as having a sense of purpose and direction in life, as well as a sense of significance. Thus, it denotes a teacher's potential realization, self-fulfillment, personal growth, and topmost experiences.

The first moderating variable, work conditions, was obtained from the Virginia Working Conditions Survey Teacher Version (2019) and was measured by the following indicators: professionalism, teaching instructions, school community supports, and safety. In this study, professionalism means that teachers are trusted, free, and respected to make sound professional decisions, particularly regarding instruction. Teachers provide learners with learning through teaching instructions. It entails teachers and other adults providing adequate access to instructional materials in the school.

Support from the school community can be seen in the teachers' awareness, respect, comfort, and conviction that their needs are met by the entire administration through differentiated professional development, upholding a manageable student population, and effective discipline communication. Teachers and students who value security and a calm learning environment in the school are considered to be safe.

The second moderating variable is professional development with observed indicators adopted from Yost, et al. (2009) as curriculum planning and delivery, accommodation for individual differences, problem-solving, and teachers' strategies. In this study, curriculum planning and delivery refer to a set of guides for students to learn. It is a holistic approach encompassing not only subjects but also the connections between subjects, and all aspects of schooling that define the learner's experience. Accommodation for individual differences is defined as the process of catering to all students equally regardless of family background, ethnicity, preferences, capacities, and capabilities.

Differentiated instruction is one strategy that teachers can use to accommodate high and low-achievers in the same classroom. Problem-solving can be used as a strategy by teachers and school leaders to deal with conflicts in the classroom. It is possible to accomplish this through brainstorming, problem identification, support, and encouragement. Teacher strategies are methods, updates, and trends that teachers use to help their students. This can be accomplished through additional studies, training, and so on.

Team structure, leadership, situation monitoring, and communication are the indicators for the independent variable of teamwork (Brock, et al, 2013). For improved accountability, the team structure in this study refers to the teachers' trailed roles and responsibilities in the classroom. The heads of the schools are referred to as examples of leadership for the teachers there. Situation monitoring is the practice of frequently observing a teacher's performance to prevent conflicts, improve communication, ensure follow-up, and ensure excellent performance. Communication is defined as the ongoing exchange of messages, clarifications, and agreed-upon means of information sharing on both a verbal and nonverbal level.

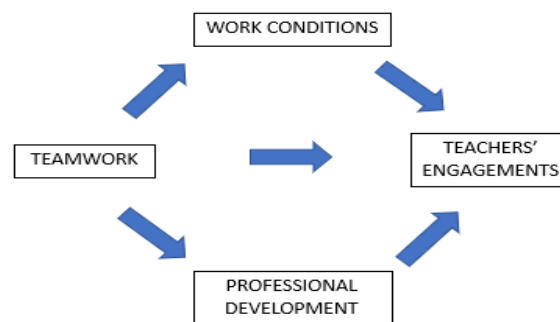


Fig. 1: The Mediating Effects of Work Conditions and Professional Development on the Relationship between Teamwork and Teachers' Engagement

III. METHOD

In this study, a descriptive correlational quantitative research design was used. Descriptive research provides an accurate representation of the characteristics and focuses on describing the variables that exist in a given situation (Mohajan, 2020). Quantitative research methods particularly statistical methods—are used to understand a problem (Mishra & Alok 2022).

Research approaches are strategies and techniques that move decisions away from broad hypotheses and toward in-depth techniques for information gathering and analysis (Creswell, 2014; Habib, 2021; Nayak & Singh, 2021). It combines theoretical presumptions, strategies, and precise methods. It determined the level of the mediating effect of teamwork and teachers' engagement on the relationship between work conditions and professional development among secondary teachers. Further, employed in this study is the mediation model.

The respondents to this study, which was conducted in the academic year 2021–2023, were all public secondary school teachers from the various divisions in Region XI, regardless of their age, sex, status, area of specialization, teaching loads, or years of experience. It sought to serve 400 willing participants, as was deemed appropriate for the research design. However, the study does not include public elementary school teachers, secondary school teachers with office or non-teaching ancillary assignments, or teachers who do not reside in Region XI.

The following statistical tools were used in the computation of data and testing of the hypotheses at a 0.05 level of significance:

- **Mean:** Used to characterize the level of work conditions, engagement, teamwork, and professional development of effective teachers and to answer problems 1, 2, 3 & 4.
- **Pearson Product-Moment Correlation (Pearson r):** This was applied to determine the significance of the interrelationships between work conditions and the professional development of teachers, engagements and professional development of teachers, and teamwork and

the professional development of teachers are significant.

- **Path Analysis:** This method was employed to determine the mediating effect of teamwork and teacher engagement on the relationship between work conditions and the professional development of secondary teachers in Region XI.

Data collection procedures were followed to ensure the success of the study. The questionnaire validation by the five experts was submitted to the University of Mindanao Ethics and Review Committee (UMERC) for additional review after the online proposal was defended. On June 4, 2022, the survey questionnaire study was approved under UMERC Protocol No. 2022-180. The dates of the 2022 pilot test were June 5-8.

It took the researcher five weeks to complete the task given the study's extensive geographic coverage as a result, the survey was gradually and actually administered last week of June 2022 adhering to the IATF protocols through Google Forms, Facebook Messenger, and offline copies to the chosen schools of Region XI. To lessen the likelihood of outliers during the analysis, data retrieval, screening, collation, and tabulation were all completed. Data were collected on July 28, 2022, according to the Data Privacy Act of 2012, and after being interpreted and analyzed, they were made public on August 8, 2022. Before, during, and after the study, the researcher generally complied with all UMERC-established ethical standards.

IV. RESULT

Table 1: Levels of Teamwork

Indicators	SD	Mean	D.E.
Team Structure	0.422	4.35	Very High
Leadership	0.462	3.66	High
Situation Monitoring	0.404	3.96	High
Communication	0.442	4.19	High
Overall	0.353	4.04	High

Displayed in Table 1 is the level of teamwork with a weighted mean of 4.04 with a standard deviation of 0.353, and a verbal interpretation of High. The results show that three out of the four indicators received a high mean value like leadership with a mean value of 3.66, situation monitoring with a mean value of 3.96, and communication with a mean value of 4.19. As intensified by Tumelius & Kuure (2022) that effective team monitoring is not simply achieved by watching teammates doing their work. Monitoring joins situation awareness. Situation awareness is described as having three components: gathering information; understanding what the information means, and being able to anticipate what might happen next.

Team structure, which has a mean value of 4.35 and is related to a study by Khan et al. (2022), found that teamwork is increasing when supported by policies and practices that challenge conventional professional boundaries and bring care closer to the client. This is the only indicator that received a verbal interpretation of Very High. When mature communication, responsible interdependence, psychological health, shared intent, task clarity, and a clear goal are present during the teaming process, the experience can have a positive effect on a person's attitude toward teamwork, according to Guhao & Quines, (2021); Pisoni&Gijlers, (2020).

Table 2: Levels of Engagement

Indicators	SD	Mean	D.E.
Cognitive	0.401	4.09	High
Emotional	0.393	4.14	High
Social	0.413	4.04	High
Psychological	0.489	3.51	High
Overall	0.348	3.94	High

A summary of the weighted mean for each engagement criterion is presented in Table 2. The descriptive interpretation of the overall weighted mean is High, with a standard deviation of 0.348 and a weighted mean of 3.94. As supported by the study of Perera et al., (2021), teachers may be differentially engaged in the teaching environment regarding their different energetic investments. Such different profiles of engagement have varying implications for well-being-related outcomes and can be predicted by their teaching capability beliefs. The following indicators of engagement are cognitive (MV = 4.09), emotional (MV = 4.14), social (MV = 4.04), and psychological (MV = 3.51).

Engagement suggests a possibly fruitful route for learning about the nature of school organization and its effects on teachers' job satisfaction. (Cherkowski et al., 2022). According to Huang et al. (2022), increased engagement predicts better learning outcomes, such as the development of knowledge and skills through simulation games, which also improves a person's HOTS like problem-solving, critical thinking, and creativity. The relationship between student understandings of instruction and its influence on their cognitive presence is too clearly evident in the analysis.

Table 3: Levels of Work Conditions

Items	SD	Mean	D.E.
Being trusted to make sound professional decisions about instruction.	0.544	4.42	Very High
Being relied upon to make decisions about educational issues.	0.609	4.18	High
Being engaged in collaborative problem-solving in the school.	0.688	4.15	High
Being an effective leader in the school.	0.633	4.02	High
Being free to be creative in his teaching profession.	0.577	4.36	Very High
Being in control of how he uses his scheduled class time.	0.741	4.09	High
Being respected under current policies.	0.607	4.29	Very High
Being confident in my ability to do my job well.	0.541	4.50	Very High
Setting the grading and student assessment practices.	0.613	4.39	Very High
Feels that the policy directives are improving his educational system.	0.642	4.21	Very High
I and other adults in the school are encouraging students to provide constructive feedback to others.	0.602	4.40	Very High
I and other adults in the school are often connecting what students are learning to live outside the classroom.	0.543	4.41	Very High
I and other adults at this school are providing students with the support they need to succeed.	0.580	4.41	Very High
I and other adults at this school are feeling responsible to help all students achieve their full potential.	0.554	4.48	Very High
I see students come to school ready to learn.	0.668	4.18	High
I and other adults in school are expecting students to succeed.	0.532	4.52	Very High
I and the physical environment are supporting teaching and students' learning.	0.555	4.44	Very High
Having adequate space to work productively.	0.630	4.26	Very High
I and the school are providing sufficient access to appropriate instructional materials.	0.660	4.20	Very High
Having the support, I need to incorporate technology into teaching instruction.	0.642	4.21	Very High
Feeling respected by the school's administrators.	0.659	4.26	Very High
Feeling comfortable raising issues and concerns that are important to me and the administration as a whole.	0.717	4.07	High
Trusting that the school administrators do what they say they will do.	0.704	4.19	High
Being convinced that the school administrators support the professional development of teachers and staff.	0.642	4.29	Very High
Seeing that support is teachers' efforts to maintain discipline in the classroom.	0.572	4.37	Very High
Being aware that the school administrator communicates a clear vision for the school.	0.655	4.30	Very High
Believing that performance is assessed objectively.	0.611	4.31	Very High
Being provided with resources for professional development in the school.	0.694	4.12	High
Considering differentiated professional development to meet the individual needs of teachers.	0.594	4.29	Very High
Considering class sizes as reasonable such that teachers have the time available to meet the needs of the students.	0.664	4.27	Very High
Working peacefully in the school.	0.646	4.39	Very High
Being treated with respect by the students in this school.	0.536	4.46	Very High
Seeing that bullying is a problem in this school.	1.113	3.44	High
Seeing that students are bullied in this school about their clothing or physical appearance.	1.158	3.12	Moderate
Experiencing teachers and students alike being bullied about their ethnicity or minority and limitation.	1.184	2.93	Moderate
Experiencing that the school administrations set high regard for the student's safety.	0.641	4.31	Very High
Seeing that parents and guardians support their children to achieve the educational goals of the school safely.	0.572	4.32	Very High

Being able to say that teachers' security in this school is at stake.	1.149	3.47	High
Being on a school's premises which is a child child-friendly place.	0.566	4.38	Very High
Being in school- is a good place to work and learn.	0.599	4.36	Very High

Overall **0.384** **4.19** **High**

With an overall weighted mean score of 4.19 and a standard deviation of 0.384, Table 3's level of working conditions can be characterized as high. 28 of the variables have the highest mean and a verbal description of Very High for the results for particular items. On the other hand, the items with lower means and verbal descriptions of High are: realizing that bullying is a problem in this school (MV = 3.44), being able to state that the safety of the teachers in this school is in jeopardy (MV = 3.47), acting as an effective leader in the school (MV = 4.02), and having control over how he uses his allotted class time (MV = 4.09), being engaged in collaborative problem-solving in the school (MV

= 4.15), being relied upon to make decisions about educational issues. (MV = 4.18), trusting that the school administrators do what they say they will do (MV = 4.19), I see students come to school ready to learn (MV = 4.18), feeling comfortable raising issues and concerns that are important to me and the administration as a whole (MV = 4.07) and being provided with resources for professional development in the school (MV= 4.12). These findings support the study of Zhao et al., (2023)that schools, where teachers ratedtheir working conditions as more satisfactory had lower attrition rates.

Table 4: Levels of Professional Development

Items	SD	Mean	D.E.
Setting high expectations for myself, the students, and the school.	0.619	4.22	Very High
Enhancing what is in the curriculum guide used by the school to fit learners' needs.	0.597	4.22	Very High
Being aware of the school's direction in terms of curriculum planning, and delivery.	0.547	4.34	Very High
Incorporating new insights, knowledge, or activities for students to learn.	0.585	4.18	High
Being equipped with the 21 st skills in delivering the lessons to the students.	0.562	4.50	Very High
Being open to any improvements and more possibilities.	0.589	4.55	Very High
Encouraging students to express their thoughts.	1.072	3.24	Moderate
Being limited in delivering the content of the curriculum.	0.544	4.42	Very High
Providing opportunities for students to reflect on what they have learned.	0.574	4.54	Very High
Being ready to be trained.	0.607	4.38	Very High
Providing opportunities for independent or group learning to promote depth of understanding of content.	0.578	4.58	Very High
Considering everyone's value.	0.597	4.37	Very High
Accommodating group or subgroup differences (e.g., through individual conferencing, task assignment, etc.)	0.922	3.92	High
Motivating the few to comply with their tasks.	0.648	4.18	High
Encouraging others to use multiple interpretations of events	0.919	3.84	High
Relating to a few with care.	0.563	4.29	Very High
Allowing myself to discover key ideas through structured activities provided by the school.	0.597	4.39	Very High
Seeing events as opportunities for growth.	0.562	4.36	Very High
Employing brainstorming techniques in developing myself or with the group.	0.569	4.54	Very High
Checking the outputs of students.	0.574	4.38	Very High
Employing brainstorming techniques in developing myself or with the group.	0.588	4.37	Very High
Considering challenges as a burden to carry through.	1.152	3.11	Moderate
Seeking support from others in handling problems.	0.461	4.13	High
Encouraging others to explore the solutions to problems.	0.608	4.26	Very High
Engaging in problem identification and solution in the workplace.	0.651	4.13	High
Working alone to avoid problems and conflicts in the workplace.	1.043	3.17	Moderate
Working to distantiate the problem until it is solved.	0.917	3.55	High
Involving in solution-finding activities and comprehensive situation articulation.	0.631	4.02	High

Delegating others to make workloads lighter.	0.838	3.77	High
Finding ways and means to solve work-related issues.	0.593	4.21	Very High
Updating myself on the new trends of learning.	0.560	4.45	Very High
Considering research is a tiresome endeavor and an expense.	1.037	3.27	Moderate
Participating in the online training for updating.	0.599	4.25	Very High
Applying gathered results in research.	0.690	3.95	High
Viewing research as a long and heavy process of learning.	0.927	3.61	High
	0.575	4.25	Very High
Taking new trends in learning as a challenge.	0.567	4.23	Very High
Encouraging students to determine the implications of the findings	0.619	4.19	High
Providing opportunities for students to analyze data and presenting it in appropriate charts, graphs, or tables.			
Encouraging colleagues to further their learning.	0.636	4.19	High
Finding research helpful for future	0.612	4.34	Very High
Overall	0.381	4.12	High

Presented in Table 4 is the level of professional development with an overall weighted mean score of 4.12, a standard deviation of 0.3811, and a verbal interpretation of High. For specific items' results, 23 of the variables got the highest means with a verbal description of Very High while 13 items have the lower means and have a verbal description of High.

On the other hand, the items with the lowest means and have a verbal description of Moderate are: encouraging students to express their thoughts (MV = 3.24), considering challenges as a burden to carry through (MV = 3.11), and working alone to avoid problems and conflicts in the workplace (MV = 3.17), and considering research, a tiresome endeavor and an expense (MV = 3.27). Bowman et al., (2022) clarified that values facilitate the influence of PD exposure for integration. It is suggested that PD may be

most effective when targeting improving teachers' values in addition to enhancing related skills.

Challenges are sometimes, considered as one of the burdens to carry through as brought about in one of the indicators with the lowest mean and moderate descriptive level as Alvarez, et al.,(2020) cited that teachers encountered different personal and work-life circumstances which in turn hinder their capability to engage in continuing professional learning. Pursuing continuing professional development is a problem for many teachers due to personal or work-related uncertainties. Therefore, understanding the teachers' perception of learning in professional development is important as it will provide policymakers with an alternative avenue to rethink and redesign CPD program offerings.

Table 5: Significance of the Relationship between Levels of Teamwork and Engagements

Teamwork	Engagement				Overall
	Cognitive	Emotional	Social	Psychological	
Team Structure	.576* (0.000)	.552* (0.000)	.614* (0.000)	.180* (0.000)	.567* (0.000)
Leadership	.519* (0.000)	.492* (0.000)	.558* (0.000)	.609* (0.000)	.667* (0.000)
Situation Monitoring	.603* (0.000)	.575* (0.000)	.609* (0.000)	.443* (0.000)	.672* (0.000)
Communication	.544* (0.000)	.550* (0.000)	.579* (0.000)	.254* (0.000)	.572* (0.000)
Overall	.684* (0.000)	.662* (0.000)	.721* (0.000)	.458* (0.000)	.758* (0.000)

*Significant at 0.05 significance level

Contained in Table 5 are the results of the relationship between levels of teamwork and engagement. As noted in the hypothesis, the relationship was tested at a 0.05 level of significance. The overall r value of .758 with a p-value of <0.05 signified the rejection of the null hypothesis. It revealed too that all indicators of teamwork positively correlated with engagements- team structure (r = .567), leadership (r = .667), situation monitoring (r = .672), and communication (r =.572). As stressed by Rais & Rubini,

(2022), the standard of teacher services can be raised by teamwork that emphasizes shared objectives, member engagement, valuing togetherness, communication, complementarity, and sharing. The quality of teaching services can be enhanced by work engagement that emphasizes work, competence, the importance of work, development possibilities, level of performance, and interest in goals.

Table 6: Significance of the Relationship between Levels of Teamwork and Work Conditions

Teamwork	Work Conditions
	Overall
Team Structure	.699* (0.000)
Leadership	.474* (0.000)
Situation Monitoring	.560* (0.000)
Communication	.582* (0.000)
Overall	.706* (0.000)

*Significant at 0.05 significance level.

Shown in Table 6 are the results of the test on the relationship between teamwork and work conditions. The overall values reveal a positive and significant relationship between teamwork and work conditions ($r = .706, p < .05$). Further, all indicators of teamwork correlate positively with work conditions, namely team structure ($r = .699, p < .05$), leadership ($r = .474, p < .05$), situation monitoring ($r = .560, p < .05$), and communication ($r = .582, p < .05$). Teamwork allows employees to work effectively. When team members

are aware of their responsibilities and roles, as well as the significance of their output being relied upon by the rest of their team, team members will be driven to share the same work values (Quines & Piñero, 2022). Further, for teachers in this generation to lead and communicate effectively, they must be inclusive, exhibit sincerity, adaptability, warm communication, a horizontal relationship, consistent behavior, supportive behavior, inspiring students, problem-solving, and a smile.

Table 7: Significance of the Relationship between Levels of Teamwork and Professional Development

Teamwork	Professional Development
	Overall
Team Structure	.663* (0.000)
Leadership	.532* (0.000)
Situation Monitoring	.731* (0.000)
Communication	.803* (0.000)
Overall	.832* (0.000)

*Significant at 0.05 significance level.

Identified in Table 7 are the test results of the relationship between teamwork and professional development. As can be congregated from the hypothesis, the relationship was tested at a 0.05 level of significance. The overall values reveal a positive and significant relationship between teamwork and professional development ($r = .832, p < .05$). All indicators of teamwork

correlate positively with professional development, namely team structure ($r = .663, p < .05$), leadership ($r = .532, p < .05$), situation monitoring ($r = .731, p < .05$), communication ($r = .803, p < .05$). Lysberg, J. (2022) quoted that collaborative efforts of teachers increase understanding which creates learning.

Table 8: Significance of the Relationship between Levels of Work Conditions and Engagements

Work Conditions	Engagement				Overall
	Cognitive	Emotional	Social	Psychological	
Overall	.630* (0.000)	.578* (0.000)	.651* (0.000)	.276* (0.000)	.635* (0.000)

*Significant at 0.05 significance level.

Contained in Table 8 are the test results of the connection between work conditions and engagements. As can be picked up from the hypothesis, the relationship was tested at a 0.05 level of significance. It revealed then a positive and significant relationship between the indicators of work conditions and engagements specifically, cognitive ($r = .630$), emotional ($r = .578$), social ($r = .651$), and psychological ($r = .276$). The overall R-value is $.635$ with a

p-value of $p < .05$, rejecting the null hypothesis. The overall result shows that work conditions are positively linked with engagements. The results further revealed that teachers need to be authentic to build positive relationships with students. Thus, work conditions would probably rise the secondary teachers' engagement. Teachers learn by interacting (Leite & Havu-Nuutinen, 2022).

Table 9: Significance of the Relationship between Levels of Professional Development and Engagements

Professional Development	Engagement				Overall
	Cognitive	Emotional	Social	Psychological	
Overall	.656* (0.000)	.618* (0.000)	.637* (0.000)	.349* (0.000)	.674* (0.000)

*Significant at 0.05 significance level.

Showcased in Table 9 is the relationship between professional development and engagements. As shown in the hypothesis section, the relationship was tested at a 0.05 level of significance. The results revealed a positive and significant relationship between the indicators of professional development and engagements, specifically, cognitive ($r = .656$), emotional ($r = .618$), social ($r = .637$), and psychological ($r = .349$). The results reflect that the

teachers' levels of professional development positively correlate with teachers' engagements since the overall R-value is $.674$ with a p-value of $p < .05$, rejecting the null hypothesis. It goes to show that professional development would likely increase teachers' engagement in the different secondary schools. Li et al., (2022) quoted that teachers' work engagement positively projected participation in CPD.

Table 10: Mediating Effect: Path Analysis (Significant Partial Double Mediation)

PATH	ESTIMATES		SE	C.R.	P
	Unstandardized	Standardized			
Teamwork → ProfDevelop	.899	.832	.029	30.953	***
Teamwork → Work Conditions	.768	.706	.037	20.550	***
ProfDevelop → Engagements	.113	.124	.050	2.234	.025
Teamwork → Engagements	.512	.520	.062	8.230	***
Work Conditions → Engagements	.173	.191	.039	4.418	***

Using path analysis, Table 10 shows the mediating effect of TW (teamwork) on PD (professional development) as reflected in Table 10 which revealed a significant regression with $p < 0.001$. This path signifies that every unit rise in teamwork corresponds to a $.899$ -unit increase in professional development with a standard error of $.029$. Path TW (teamwork) to WC (work conditions) revealed a significant regression with $p < 0.001$ which indicates that every unit increase in teamwork corresponds to a $.768$ -unit increase in work conditions with a standard error of $.037$. While Path PD (professional development) to E (engagements) also shows significant regression with < 0.001 indicating that every unit increase in professional development corresponds to a 0.113 -unit increase in engagements with a standard error of $.050$. Moreover, Path TW (teamwork) to E (engagements) demonstrates significant regression with < 0.001 which further infers that

every unit increase in teamwork corresponds to a rise in engagements with a standard error of $.062$ and Path WC (work conditions) to E (engagements) manifests significant regression with < 0.001 which further indicates that every unit growth in work conditions corresponds to an increase in engagements with a standard error of $.039$.

With these, the result exhibited significant partial double mediation among variables as supported by Fernandez-Rio et al., (2022) that whether they are physically or virtually, a team is more than just a collection of individuals. Learning in a group setting is a powerful tool for preparing teachers for the interpersonal situations in which they will eventually have to grow. These teachers will then instruct students who need to develop their personal and social skills. Team learning enhances transferable abilities like leadership, teamwork, and reflection.

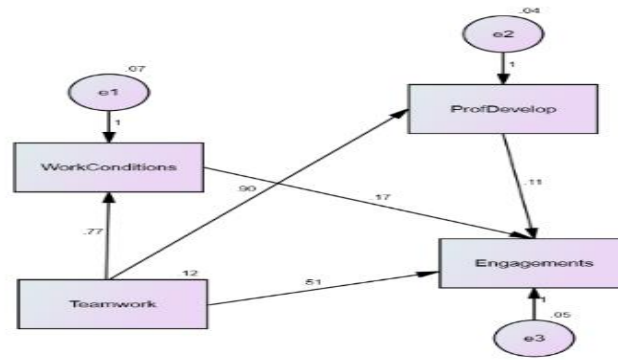


Fig. 2: The Mediating Effects of Work Conditions and Professional Development on the Relationship between Teamwork and Teachers Engagement

Figure 2 shows the mediating effects of work conditions and professional development on the relationship between teamwork and teachers’ engagement. Teamwork in terms of team structure, leadership, situation monitoring, and communication directly influenced teacher engagement. Work conditions in terms of professionalism, teaching instructions, school community support, and safety directly influenced teacher engagement. Professional development in terms of curriculum planning and delivery, accommodation for individual differences, problem-solving, and teacher strategies directly affected teacher engagement. While work conditions and professional development doubly mediated teacher engagement.

The above results are further explained by Rais & Rubini’s (2022) idea that the caliber of teacher services can be raised through teamwork that prioritizes group objectives, active participation of members, togetherness, communication, complementarity, and sharing. The quality of teacher services can be enhanced by work engagement that places an emphasis on active participation in work, competence, the importance of work, development opportunities, level of performance, and interest in organizational goals. The above results affirmed the theory of Khan on Teacher engagement that when fully implemented, individuals will be motivated to effectively engage themselves with the team. This theory serves as a guiding tool for the teachers to understand fully engagement which is truly grounded on teamwork, work condition, and professional development.

Table 11: Total, Direct, and Indirect Effects
95% CI

Effect	<i>b</i>	Lower	Upper
Total	.7467	.6854	.8080
Direct	.5124	.3927	.6321
Indirect (mediation)	.2343	.1347	.3385

The total effect of .7467 is the combined indirect and direct effect, as reflected in Table 11. The indirect effect of .2343 implies the impact of teamwork on engagements when mediated by work conditions and professional development. The results mean that an increase in teamwork for every unit corresponds to a .2343-unit in teachers’ engagements intermediated by work conditions and professional development. The findings of the study of Bergmark, (2020) confirmed that the teachers’ professional learning entailed changes in the ways they think, act, and relate to others in other areas like research and collaboration.

The table above shows teamwork has a significant influence on professional development with an estimated value of .899, a standardized estimate of .029, and a critical ratio of 30.953. In the same manner, teamwork to work

conditions with an estimated value of .768, a standardized estimate of .037, and a critical ratio of 20.550. Teamwork shows a significant relationship to engagement with an estimated value of .512, a standardized estimate of .062, and a critical ratio of 8.230. Moreover, work conditions manifest a significant relationship with engagement with an estimate of .173, a standardized estimate of .039, and a critical ratio of 4.418. On the other hand, professional development shows a great probability of error in engagement with the P value of .025. This implies that the P value is significant at a .01 with the critical ratio (CR) greater than 1.96, a regression weight when the significance is at the .05 level or better, that is, the estimated path perimeter is significant. Since the level of significance is .05, thus all variables are significant.

Table 12: Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
ProfDevelop	<---	Teamwork	.899	.029	30.953	***	
Work Conditions	<---	Teamwork	.768	.037	20.550	***	
Engagements	<---	ProfDevelop	.113	.050	2.234	.025	
Engagements	<---	Teamwork	.512	.062	8.230	***	
Engagements	<---	Work Conditions	.173	.039	4.418	***	

The table above shows teamwork has a significant influence on professional development with an estimated value of .899, a standardized estimate of .029, and a critical ratio of 30.953. In the same manner, teamwork to work conditions with an estimated value of .768, a standardized estimate of .037, and a critical ratio of 20.550. Teamwork shows a significant relationship to engagement with an estimated value of .512, a standardized estimate of .062, and a critical ratio of 8.230.

Moreover, work conditions manifest a significant relationship with engagement with an estimate of .173, a standardized estimate of .039, and a critical ratio of 4.418. On the other hand, professional development shows a great probability of error in engagement with the P value of .025. This implies that the P value is significant at a .01 with the critical ratio (CR) greater than 1.96, a regression weight when the significance is at the .05 level or better, that is, the estimated path perimeter is significant. Since the level of significance is .05, thus all variables are significant.

The results are made stronger by the analyses of the study of De Simone, (2020) which proved the importance of collaborative learning in professional development experiences. Professional development provides knowledge to design more effective experiences.

V. DISCUSSION

This chapter presents the data on teamwork, teacher engagements, work conditions, and professional development in public school secondary teachers.

A. Teamwork

The data gathered indicate that there is high overall teamwork. Leadership, situational awareness, and communication are the indicators with detailed verbal descriptions. The only indicator with a rating of Very High is team structure. These findings suggest that excellent teamwork is frequently visible among secondary school teachers in public institutions. The outcomes mentioned above are supported by Awuor et al., (2022). In collaborative learning environments, he argued that teachers increase group efficacy and raise learning satisfaction. Teamwork, according to Rais & Rubini (2022), emphasizes group objectives, members' active participation, placing a priority on unity, and communicating with one another. Teachers' dedication to the organization is influenced by all teamwork indicators. That is to say, the more committed teachers are to their organization, the stronger the teamwork (Koswara, et al., (2021). Analysis of research conducted by Pavlenko & Pavlenko, (2021) has shown too that

communication and teamwork skills are the most requested and necessary soft skills for future professionals.

B. Teachers' Engagement

Overall, there is a high level of teacher engagement. All metrics, including those for cognitive, emotional, social, and psychological functioning, showed high ratings. These findings imply that there is a high level of engagement among secondary public-school teachers. This is corroborated by Chen & Cao (2022), who quantified that a successful step-by-step plan for involving teachers at different stages of curriculum development is outlined to encourage holistic development in the field of professional practice. Cherkowski et al. (2022) quantified engagement as a potential avenue for learning about an organization's character and how it affects teachers' well-being at work.

Teachers are fully engaged in their work, have fully displayed their physical, emotional, and cognitive abilities, and are produced to the fullest extent without any restraint in exhibiting their holistic abilities. Work engagement is also a reflection of the person performing the task. To encourage comprehensive engagement in this field of professional practice, a strategy for involving teachers at various stages of curriculum development is also presented (Kahn, 2021); (Alazmi & Al-Mahdy, 2022).

Due to the fact that teachers who are genuinely invested in their work are more committed, happier, and less likely to leave their position, as well as producing better work related to educational reforms, it is necessary for teachers to be actively involved in their work if they want education to develop sustainably. Teachers should also have a positive attitude toward their jobs. (Cai et al., 2022). It was discovered that teachers' work engagement was a predictor of their level of professional consciousness. (Fute et al., 2022).

C. Work Conditions

Verbal descriptions for the majority of the work conditions indicators were Very High. According to Kraft et al. (2020), a sudden, significant decline in teachers' sense of success was caused by the pandemic and the switch to emergency remote teaching. Additionally, it demonstrated how successful people thrive in environments that are supportive, such as schools. Workplace settings favor a more excellent state of mind toward their work, enhance their professional lives, and allow for the development of teachers with their peers and students. (Coelho, et al., 2023). In order to improve the working conditions for teachers, new processes and insights must be developed.

D. Professional Development

Regarding the development and delivery of curricula, consideration of individual differences, research methods, and problem-solving techniques, the professional development respondents gave these areas high marks. It is stated that the overall mean is High. According to Bowman et al.'s study from 2022, professional interaction at work is a crucial component of professional development. This finding is in line with that study. Professional development is one method of effectively assisting teachers. In addition to enhancing technology-related skills, professional development may be most effective when it focuses on enhancing teachers' values. In other words, better-coordinated efforts are required to develop vertical professional development across the entire school.

Bergmark, U. (2020) also noted that performativity and accountability have had an impact on teachers' professional development, resulting in teachers' limited ownership of professional development procedures and decreasing relevance for teaching practice.

E. Significance of the Relationship between Levels of Teamwork and Engagement

A significant relationship was discovered when the relationship between teamwork and engagement was tested. This finding implies that teacher collaboration is related to student engagement. Positive teamwork, in other words, would almost certainly increase engagement. This finding backs up Mughal et al.'s (2020) study, which stated that the interrelationship between team and coworker is an important aspect that specifically highlights the interpersonal aspects of employee engagement, constituting interpersonal relationships and supportive teams, thus contributing to employee engagement. Employee engagement is one of the most important tools for gaining a competitive advantage over others. The work environment is a significant factor that influences employee engagement.

F. Significance of the Relationship between Levels of Teamwork and Work Condition

The relationship between teamwork and working conditions is positive and significant. This suggests that effective teamwork would likely increase the attainment of ideal work conditions, which is consistent with the study result conducted by Mendonça et al. (2021), which found that employee involvement completely arbitrated the effect of work conditions and teamwork.

Furthermore, Nelson, (2021) demonstrated that teamwork plays an important role in the work environment of teachers; similarly, workplaces must support development and implementation, dynamic organizational activities, and employee needs for balanced collaboration, as well as other work processes in the achievement of the ultimate goal. Desiriani, (2023) confirmed that teachers who worked in sites with superior instructional support perceived their work environments more positively across multiple dimensions. Zhang et al., (2021) agreed that activities should be planned to encourage teachers to collaborate as a team.

G. Significance of the Relationship between levels of Teamwork and Professional Development

The relationship between levels of teamwork and professional development is found to be both positive and significant. As Lysberg, (2022) explains, teachers' professional learning through collaborative effort enhances knowledge in authentic settings and unpacks the capabilities to author their pedagogical changes; teachers are potentially becoming better equipped to facilitate students' learning by offering them a richer set of learning opportunities. Teachers' teams operate in a collective zone of proximal development when exploring practice problems and sharing ideas and suggestions for possible solutions.

H. Significance of the Relationship between Levels of Work Condition and Engagement

Work conditions and teacher engagement revealed a positive and significant relationship between the indicators of teacher engagement. It implies that having a positive school climate would likely increase teacher engagement. According to the findings, Coyle et al, (2022) asserted that teachers' engagements and the school environment are inextricably linked. Thus, improving the components of the school climate that lead to teacher engagement will increase motivation to implement innovative educational methods.

I. Significance of the Relationship between Levels of Professional Development and Engagement

The test of the relationship between professional development for teachers and engagement for teachers reveals a positive and significant relationship between the two variables. This suggests that professional development for teachers would likely increase teachers' engagement with public secondary teachers. This result supported the ideas of Yang et al., (2022) that all professionals must be continuously involved in their PD to stay current in the field and maintain a competitive edge over others. Similarly, professional development for teachers has become essential for individuals concerned with their own learning and growth, as well as those seeking to improve student achievement. Professional development for teachers can be accomplished effectively and affordably by encouraging and facilitating teachers, as well as providing constructive feedback on good solutions to problems.

J. Mediating Effect of Professional Development and Work Condition

It is discovered using path analysis that professional development and work conditions partially mediate the relationship between teamwork and engagement. The partial mediation could not establish that professional development and working conditions influence teachers' participation. It can only imply that professional development and working conditions can explain a portion of how teamwork influences teachers' engagement. Teachers' school conditions and engagements are linked and allied, according to Coyle et al, (2022). Similarly, the finding stated that teacher professional development had a significant association with teacher involvement. (Yang et al., 2022). As a result, in order to stay current in their field and maintain a competitive advantage, all professionals must be actively involved in their field.

K. Total, direct, and indirect effects

The combined indirect and direct effect is 0.7467, as shown in Table 11. The indirect effect of 0.2343 suggests that teamwork has an impact on engagements when it is mediated by work conditions and professional development. According to the findings, a 0.2343-unit increase in teamwork corresponds to a 0.2343-unit increase in teacher engagement, which is mediated by work conditions and professional development.

VI. CONCLUSION AND RECOMMENDATION

A. Conclusion

The study's conclusions were drawn based on its findings. The project's findings supported the theories on collaboration and teachers' participation in the regulating roles of the workplace environment and professional growth in public school teachers. Results showed that teamwork and working conditions have a positive and significant relationship with overall values. There is a correlation among each variable's indicators. Data thus indicate a favorable relationship between engagement and teamwork.

The results also provide a thin enough thread of evidence that collaboration is crucial for enhancing secondary teachers' engagement. In other words, the results indicate high levels of professional development, teamwork, engagement, and working conditions. This frequently has a significant impact on how teamwork, professional development, and working conditions are related to engagement.

The study's findings support Khan's theory of employee engagement as well. (1990). Teachers develop holistically with the help of the significant others in their lives for validation and to improve the caliber of services because they are social beings by nature (Rais & Rubini, 2022); (Samai & Campbell, 2021); and (Ningsih, et al., 2023).

B. Recommendation

Several suggestions were made in light of the findings. The findings show a strong relationship between the four factors—professional development, working conditions, teachers' engagement, and teamwork. To advance professional life, it is important to practice and sustain teachers' engagement in teamwork and work environments that have very high descriptive values for professional development. This will motivate teachers to keep working in engaging teams.

The outcomes, as shown by the indicators with moderate and low levels, would thus encourage Department of Education personnel, particularly school heads, to address the problem of school conflict. Teachers' psychological well-being should be improved through interventions designed by school leaders that demonstrate a variety of conflict management techniques.

Further, due to the low revealed results in terms of mean scores in engagement, particularly in indicator social level, it is desired to develop the managerial skills of leaders to competently manage schools and guide their teachers,

look into issues on both sides, show care, and avoid blaming others. Bullying, which has the lowest means of results, must be addressed in order to help learners and educators realize their dreams in a more secure work environment. Supporting faculty members instead of washing their hands when they find themselves in unpleasant situations can also improve the work environment.

It is generally desired to establish and raise levels of planning and thought while also enhancing the social and professional aspects of the teachers in order to combat boredom in the classroom. As these are equally crucial factors for better teaching performances in the schools where secondary teachers belong, implications regarding programs and activities that may reinforce secondary teachers' understanding of engagement, teamwork, work conditions, and professional development may be realized. It is also suggested that additional research be done to look at other variables that could mediate the relationship between engagement, teachers' professional development, and other variables for the purposes of the local study. Finally, a dissemination strategy should be launched through a seminar or the study's findings should be published in a reputable national or international journal. This action plan should increase teachers' engagement.

REFERENCES

- [1.] Adisa, T. A., Ogbonnaya, C., & Adekoya, O. D. (2021). Remote working and employee engagement: a qualitative study of British workers during the pandemic. *Information Technology & People*, (ahead-of-print).
- [2.] Al Hawamdeh, N. (2022). The influence of humble leadership on employees' work engagement: the mediating role of leader knowledge-sharing behaviour. *VINE Journal of Information and Knowledge Management Systems*, (ahead-of-print).
- [3.] Alazmi, A. A., & Al-Mahdy, Y. F. H. (2022). Principal authentic leadership and teacher engagement in Kuwait's educational reform context. *Educational Management Administration & Leadership*, 50(3), 392-412.
- [4.] Awuor, N. O., Weng, C., & Militar, R. (2022). Teamwork competency and satisfaction in online group project-based engineering course: The cross-level moderating effect of collective efficacy and flipped instruction. *Computers & Education*, 176, 104357.
- [5.] Bergmark, U. (2020). Teachers' professional learning when building a research-based education: context-specific, collaborative and teacher-driven professional development. *Professional Development in Education*, 1-15.
- [6.] Bowman, M. A., Vongkulluksn, V. W., Jiang, Z., & Xie, K. (2022). Teachers' exposure to professional development and the quality of their instructional technology use: The mediating role of teachers' value and ability beliefs. *Journal of Research on Technology in Education*, 54(2), 188-204.

- [7.] Cai, Y., Wang, L., Bi, Y., & Tang, R. (2022). How Can the Professional Community Influence Teachers' Work Engagement? The Mediating Role of Teacher Self-Efficacy. *Sustainability*, 14(16), 10029.
- [8.] Chen, Y., & Cao, L. (2022). Promoting maker-centred instruction through virtual professional development activities for K-12 teachers in low-income rural areas. *British Journal of Educational Technology*, 53(4), 1025-1048.
- [9.] Cherkowski, S., Kutsyuruba, B., Walker, K., Ragoonaden, K., Claypool, T., & Godden, L. (2022). Leaderful Mindsets: Positive Pathways to Embodiment and Engagement for Well-Being and Flourishing in Organizations.
- [10.] Coelho, G. L. D. H., da Fonsêca, P. N., Vilar, R., de Carvalho Mendes, L. A., & Gouveia, V. V. (2023). How can human values influence work engagement among teachers? an exploratory study. *Trends in Psychology*, 1-14.
- [11.] Coyle, S., Weinreb, K. S., Davila, G., & Cuellar, M. (2022, February). Relationships matter: The protective role of teacher and peer support in understanding school climate for victimized youth. In *Child & Youth Care Forum* (Vol. 51, No. 1, pp. 181- 203). New York: Springer US.
- [12.] Creswell, J. W. (2021). *A concise introduction to mixed methods research*. SAGE publications.
- [13.] Desiriani, D., Kristiawan, M., & Wardiah, D. (2023). The Influence of Self-Efficacy and Work Environment on Teacher's Professional Competence. *Journal of Social Work and Science Education*, 4(1), 120-131. Efficacy, and positive affect in encouraging educator data use to aid student learning. *Teacher Development*, 24(4), 443-465.
- [14.] DJASTUTI, I. (2019). Fun at work and employee performance: the roles of job satisfaction and organizational commitment in manufacturing companies. *Wseas transactions on business and economics*, 16.
- [15.] England, L., Kamhi-Stein, L. D., & Kormpas, G. (Eds.). (2023). *English Language Teacher Education in Changing Times: Perspectives, Strategies and New Ways of Teaching and Learning*. Taylor & Francis.
- [16.] Fernandez-Rio, J., Rivera-Pérez, S., & Iglesias, D. (2022). Cooperative learning interventions and associated outcomes in future teachers A systematic review: [[es]] Intervenciones de aprendizaje cooperativo y result adosociados en futurosdocentes: Una revision sistemática. *Revista de Psicodidáctica (English ed.)*.
- [17.] Fute, A., Oubibi, M., Sun, B., Zhou, Y., & Xiao, W. (2022). Work values predict job satisfaction among Chinese teachers during COVID-19: the mediation role of work engagement. *Sustainability*, 14(3) , 1353.
- [18.] Fute, A., Sun, B., &Oubibi, M. (2022). Assessing teaching compassion, work engagement and compassion fatigue among teachers during the pandemic. *Psychology Research and Behavior Management*, 2561- 2571.
- [19.] Guhao Jr, E. S., & Quines, L. A. THE MEDIATING EFFECT OF AUTHENTIC LEADERSHIP OF SCHOOL HEADS ON THE RELATIONSHIP BETWEEN TEAMWORK ATTITUDES AND WORK ENGAGEMENT.
- [20.] Guskey, T. R. (2002). Professional development and teacher change. *Teachers and teaching*, 8(3), 381-391.
- [21.] Habib, M. S. (2021). Qualitative and Quantitative Research Approaches.
- [22.] Huang, Y. M., Silitonga, L. M., & Wu, T. T. (2022). Applying a business simulation game in a flipped classroom to enhance engagement, learning achievement and higher-order thinking skills. *Computers & Education*, 183, 104494.
- [23.] Irshad, H., Umar, K. M., Rehmani, M., Khokhar, M. N., Anwar, N., Qaiser, A., & Naveed, R. T. (2021). Impact of work-from-home human resource practices on the performance of online teaching faculty during corona Virus disease 2019. *Frontiers in Psychology*, 12.
- [24.] Jardí, A., Webster, R., Petrenas, C., &Puigdellívol, I. (2022). Building successful partnerships between teaching assistants and teachers: Which interpersonal factors matter? *Teaching and Teacher Education*, 109, 103523.
- [25.] Johnson, K. R., Park, S., & Chaudhuri, S. (2020). Mindfulness training in the workplace: Exploring its scope and outcomes. *European Journal of Training and Development*.
- [26.] Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *The Academy of Management Journal*, 33(4), 692– 724. <https://doi.org/10.5465/256287> [Crossref], [Web of Science ®], [Google Scholar]
- [27.] Khan, A. N. (2021). A diary study of psychological effects of misinformation and COVID-19 threat on work engagement of working from home employees. *Technological Forecasting and Social Change*, 171, 120968.
- [28.] Khan, A. I., Barnsley, J., Harris, J. K., &Wodchis, W. P. (2022). Examining the extent and factors associated with inter professional teamwork in primary care settings. *Journal of Inter professional Care*, 36(1), 52-63.
- [29.] Khan, I. Y. (2020). *The Impact of Shared Leadership on Team Effectiveness in Project Teams, with Mediating Role of Trust and Moderated by Project Team Commitment (Doctoral Dissertation, Capital University)* (Doctoral dissertation, CAPITAL UNIVERSITY). *Based Innovations in Schools: The Singapore Experience*,151-171.
- [30.] Kraft, M. A., &Falken, G. T., (2020). Why School Climate Matters for Teachers and Students. *State Education Standard*, 20(2), 33.
- [31.] Kraft, M. A., Simon, N. S., & Lyon, M. A., (2020). Sustaining a sense of success: The importance of teacher working conditions during the COVID-19 pandemic (No. 20-279). Ed working paper.

- [32.] Leite, L. O., Go, W., & Havu-Nuutinen, S. (2022). Exploring the learning process of experienced teachers focused on building positive interactions with pupils. *Scandinavian Journal of Educational Research*, 66(1), 28-42.
- [33.] Li, R., Liu, H., Chen, Y., & Yao, M. (2022). Teacher engagement and self-efficacy: The mediating role of continuing professional development and the moderating role of teaching experience. *Current Psychology*, 41(1), 328-337.
- [34.] Lysberg, J. (2022). Unpacking capabilities for professional learning: teachers' reflections on processes of collaborative inquiry in situated teamwork. *Journal of Workplace Learning*, (ahead-of-print).
- [35.] Martono, S., KHOIRUDDIN, M., WIJAYANTO, A., RIDLOAH, S., WULANSARI, N. A., & Udin, U. D. I. N. (2020). Increasing Teamwork, Organizational Commitment and Effectiveness through the Implementation of Collaborative Resolution. *The Journal of Asian Finance, Economics, and Business*, 7(6), 427-437.
- [36.] Mendonça, P., Soares, A. D. C., Riana, G., & da Costa, C. A. D. J. (2021). The Influence of Employee Involvement, Work Environment and Teamwork on Employee Performance (Case Study: Ministry of Agriculture and Fisheries, Dili Timor-Leste). *Timor Leste Journal of Business and Management*, 3, 12-23.
- [37.] Mishra, S. B., & Alok, S. (2022). Handbook of research Methodology.
- [38.] Mohajan, H. K. (2020). Quantitative research: A successful investigation in natural and social sciences. *Journal of Economic Development, Environment and People*, 9(4), 50-79.
- [39.] Mughal, M. U., & Iraqi, K. M. (2020). The Impact of Leadership, Teamwork and Employee Engagement on Employee Performances. *Saudi Journal of Business and Management Studies*, 5(3), 233-244.
- [40.] Nayak, J. K., & Singh, P. (2021). *Fundamentals of research methodology problems and prospects*. SSDN Publishers & Distributors.
- [41.] Nelson, A. (2021). The Effect of Implementation of Management Support Work Environment, Team Work, and Employee Development to Employee Engagement with Employee Motivation as Mediating Variable. *MEC-J (Management and Economics Journal)*, 5(2), 131-142.
- [42.] Oo, T. Z., Magyar, A., & Habók, A. (2021). Effectiveness of the reflection-based reciprocal teaching approach for reading comprehension achievement in upper secondary school in Myanmar. *Asia Pacific Education Review*, 22(4), 675-698.
- [43.] Pavlenko, M., & Pavlenko, L. (2021, March). Formation of communication and teamwork skills of future IT specialists using project technology. *In Journal of Physics: Conference Series (Vol. 1840, No. 1, p. 012031)*. IOP Publishing.
- [44.] Perera, H. N., Yerdelen, S., McIlveen, P., & Part, R. (2021). A multidimensional, person-centered perspective on teacher engagement: Evidence from Canadian and Australian teachers. *British Journal of Educational Psychology*, 91(3), 882-910.
- [45.] Pisoni, G., & Gijlers, H. (2020). A pilot study to inform the design of a supportive environment for challenge-based collaboration. *In International Conference in Methodologies and Intelligent Systems for Technology Enhanced Learning (pp. 216-225)*. Springer, Cham.
- [46.] Quines, L. A., & Piñero, M. Y. (2022). THE MEDIATING EFFECT OF JOB SATISFACTION ON THE RELATIONSHIP BETWEEN TEAMWORK SKILLS AND WORK VALUES OF TEACHERS. *European Journal of Education Studies*, 9(11).
- [47.] Rais, S., & Rubini, B. (2022). Increasing Teacher Creativity through Strengthening Transformational Leadership, Teamwork, and Work Engagement. *Pegem Journal of Education and Instruction*, 12(1), 232-241.
- [48.] Stone-Johnson, C., & Weiner, J. M. (2020). Principal professionalism in the time of COVID-19. *Journal of Professional Capital and Community*.
- [49.] Tumelius, R., & Kuure, L. (2022). Pre-service teachers' professional vision and agency emerging in orchestrating language learning in a hybrid space. *Computer Assisted Language Learning*, 1-25.
- [50.] Van Wingerden, J., & Poell, R. F. (2019). Meaningful work and resilience among teachers: The mediating role of work engagement and job crafting. *PloS one*, 14(9), e0222518.
- [51.] van Zoonen, W., Treem, J. W., & Sivunen, A. E. (2023). Staying connected and feeling less exhausted: The autonomy benefits of after-hour connectivity. *Journal of Occupational and Organizational Psychology*.
- [52.] Yang, S., Shu, D., & Yin, H. (2022). The bright side of dark emotions: Exploring EFL teachers' emotions, emotional capital and engagement in curriculum implementation. *Teaching and Teacher Education*, 117, 103811.
- [53.] Zhang, X., Admiraal, W., & Saab, N. (2021). Teachers' motivation to participate in continuous professional development: relationship with factors at the personal and school level. *Journal of Education for Teaching*, 47(5), 714-731.
- [54.] Zhao, G., Yang, X., Long, T., & Zhao, R. (2019). Teachers perceived professional development in a multi-regional community of practice: Effects of beliefs and engagement. *Learning, Culture and Social Interaction*, 23100347.
- [55.] Zhao, T., Zhu, X., Zeng, X., & Yu, Y. (2023). Better to lose than to gamble? The typology of career differentiation and agency of experienced teachers in rural areas in China. *Teaching and Teacher Education*, 124, 104029.