

**TEACHERS' ACADEMIC OPTIMISM: PROSPECTS
AND IMPLICATIONS FOR PROFESSIONAL
DEVELOPMENT AT SECONDARY SCHOOL
LEVEL**

**By
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**NATIONAL UNIVERSITY OF MODERN LANGUAGES
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TEACHERS' ACADEMIC OPTIMISM: PROSPECTS AND IMPLICATIONS FOR PROFESSIONAL DEVELOPMENT AT SECONDARY SCHOOL LEVEL

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THESIS/DISSERTATION AND DEFENSE APPROVAL FORM

The undersigned certify that they have read the following thesis, examined the defense, are satisfied with the overall exam performance, and recommend the thesis to the Faculty of Social Sciences for acceptance:

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Candidate of Master **of Philosophy** at the National University of Modern Languages do hereby declare that the thesis **“Teachers’ Academic Optimism: Prospects and Implications for Professional Development at Secondary School Level”** submitted by me in partial fulfillment of my MPhil degree, is my original work, and has not been submitted or published earlier. I also solemnly declare that it shall not, in the future, be submitted by me for obtaining any other degree from this or any other university or institution.

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Signature of Candidate

Usama Altaf
Name of Candidate

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Usama Altaf

DEDICATION

Dedicated to

My loving Parents

Prof. Altaf Hussain Awan & Zaib Un Nisa

Without whom I would have been nothing

ABSTRACT

Thesis Title: Teachers' Academic Optimism: Prospects and Implications for Professional Development at Secondary School Level

This present study aimed to determine the relationship between Teachers' Academic Optimism and the Professional Development of Teachers. The study's objectives were to assess the ways to improve teachers' academic optimism for professional development. To find the relationship between academic optimism and professional development of teachers. The theoretical framework of the study was based on teachers' academic optimism proposed by Hoy, 2011. The model was based on three variables: academic emphasis, collective efficacy, and trust in parents and students. For the current study quantitative approach and correlation design were used. The population of the study was (168) secondary school teachers of Gojra Muzaffarabad. A random sampling technique was used to select the sample. The sample size of the study was $n=118$. The rate of return was 90 percent of the total sample. The researcher adopted two research instruments. The 1st research instrument teachers' academic optimism was adopted which consisted of three variables academic emphasis, collective efficacy, and trust in parents and students. The 2nd research instrument teachers' professional development was adapted which consisted of eight variables thematic knowledge, learning environment, cooperation, educational technology, research base, educational planning, evaluation, and development of human resources. The data were analyzed with the help of SPSS edition 22nd, applying Mean and Pearson's correlation. The results indicated that teachers at the secondary school level agreed with academic optimism. Furthermore, it was found that teachers at the secondary school level agreed with professional development. It was found that academic achievement, teamwork and educational technology can be applied for teachers' academic optimism and their professional development. It was recommended that school administrations arrange intra-school seminars where teachers discuss how to encourage students to do well, how challenging tasks may be performed, and how to improve the academic achievements of the students.

TABLE OF CONTENT

TITLE PAGE	ii
THESIS/DISSERTATION AND DEFENSE APPROVAL FORM	iii
CANDIDATE DECLARATION FORM	iv
ACKNOWLEDGEMENT.....	v
DEDICATION.....	vi
ABSTRACT.....	vii
TABLE OF CONTENT.....	viii
LIST OF TABLE	xi
LIST OF FIGURE	xiii
LIST OF ABBREVIATION	xiv
LIST OF APPENDIXES	xv
CHAPTER 1	1
INTRODUCTION.....	1
1.1 Rationale of the study	5
1.2 Statement of the problem	6
1.3 Research objectives.....	7
1.4 Null Hypothesis	7
1.5 Theoretical framework.....	8
1.6 Significance of the study.....	10
1.7 Methodology	10
1.7.1 Research approach	10
1.7.2 Research design	11
1.7.3 Population	11
1.7.4 Sampling technique.....	12
1.7.5 Sample size	12
1.7.6 Instrumentation	12
1.7.7 Data collection	13
1.7.8 Data analysis	13
1.8 Delimitation	13

1.9 Operational definition	13
CHAPTER 2	16
LITERATURE REVIEW	16
2.1 Evolution from traditional to online professional development	26
2.2 Academic optimism of teachers	28
2.3 Academic engagement	28
2.4 Self-efficacy	29
2.5 Academic emotions	29
2.6 Academic optimism of students	32
2.7 Optimism	33
2.8 Self-efficacy of teachers	34
2.10 Teacher's self-efficacy	44
2.11 Teacher's faith in parents and students	45
2.12 Teachers placing a strong emphasis on learning	45
2.13 Components of Teacher Academic Optimism	46
2.14 Academic optimism of teachers	47
2.15 School innovation	48
2.16 Enabling School Structure	49
2.17 Student's academic optimism	50
2.18 Professional development	59
2.19 Students learning achievements	61
2.20 Collaborative professional development for inclusive education	65
2.21 Pedagogy and Professional Development	65
2.22 Quality teaching rounds	66
2.23 Pupils' academic achievement	66
2.24 Student Motivation	67
2.25 School climate and academic achievement	67
2.26 Self-efficacy, school climate, and academic attainment	68
CHAPTER 3	82
RESEARCH METHODOLOGY	82
3.1 Research approach	82
3.2 Research Design	82

3.3 Population	83
3.4 Sampling technique.....	84
3.5 Sample	84
3.6 Research instrument.....	85
3.6.1 Demographic information	86
3.6.2 Academic Optimism	86
3.6.3 Validity of the tool	88
3.6.4 Pilot testing	88
3.6.5 Reliability of the Instrument	88
3.7 Data collection	97
3.8 Data analysis	98
3.9 Research Ethics.....	100
3.10 Delimitations.....	100
 CHAPTER 4.....	 101
DATA ANALYSIS AND INTERPRETATION.....	101
Demographic information.....	102
Assess Teachers' Academic Optimism.....	105
Relationship between Academic Optimism and teachers' Professional Development.....	108
 CHAPTER 5.....	 117
SUMMARY, FINDINGS, DISCUSSION. CONCLUSION,	
RECOMMENDATIONS, AND LIMITATIONS	117
5.1 Summary	117
5.2 Findings	118
5.3 Discussion.....	122
5.4 Conclusions.....	124
5.7 Limitations of study	126
 REFERENCES.....	 i
APPENDIXES.....	xvi

LIST OF TABLE

Table	Title	Page No.
1.1	Population of the study	11
1.2	Sample of the study	12
3.1	Population of the study	83
3.2	Sample of the study	84
3.3	Description of academic optimism scale	85
3.4	Description of teachers' professional development scale	86
3.5	Cronbach Alpha reliability of academic optimism scale (No of teachers=29)	88
3.6	Item-total statistics	89
3.7	Item-total correlation	90
3.8	Inter-section correlation of academic optimism scale	92
3.9	Cronbach Alpha reliability of teachers professional development scale pilot testing (No. of teachers=29)	93
3.10	Item-total statistics	94
3.11	Item-total correlation	96
3.12	Intersection-correlation of teacher professional development	99
3.13	Data analysis statistics	102

4.1	Gender wise distribution of population	105
4.2	Experience wise distribution of population	106
4.3	Rank wise distribution of population	107
4.4	Level of teachers academic optimism among secondary school	108
4.5	Level of teachers professional development among secondary school teacher	109
4.6	Relationship between teacher academic optimism and teachers professional development	111
4.7	Relationship between academic optimism and academic emphasize	112
4.8	Relationship between academic optimism and collective efficacy	113
4.9	Relationship between academic optimism and trust in parents and students	114
	Alignment table	123

LIST OF FIGURE

Figure no.	Title	Page No.
Fig. 1	Theoretical framework of the study	9
Fig. 4.1	Gender distribution of the population	105
Fig. 4.2	Experience-wise distribution of the population	106
Fig. 4.3	Rank-wise distribution of population	107

LIST OF ABBREVIATION

Abbreviation	Term
STEM	Science technology engineering and mathematics
TPD	Teachers professional development
PD	Professional development
SPSS	Statistical package for social sciences
SD	Strongly disagree
D	Disagree
N	Neutral
A	Agree
SA	Strongly agree

LIST OF APPENDIXES

appendix A	Theoretical framework of the study
Appendix B	Topic approval
Appendix C	Data collection reference letter
Appendix D	Research instruments
Appendix E	Proofreading certificate

CHAPTER 1

INTRODUCTION

Establishing an optimistic school culture is significant for learners' academic achievement, social connection, a conducive work atmosphere, and effective teacher-student and teacher-parent interactions. Optimistic school culture has some features that make a school different from others develop academic performance, and optimistically affect the activities of dissimilar school participants. Academic optimism denotes a mixture of collective efficacy and trust in parents and students. Furthermore, this paradigm is surrounded by the most significant and productive character build that involves optimistic perceptions. Optimism motivates and improves the public's hesitations and concerns in hard circumstances and encourages them to perform their best to accomplish their aims and high level of academic optimism supports learners to achieve their goals (Eshel et al., 2021).

Academic performance is considered a significant characteristic and considered a center around which education takes place. It regulates the failure and success of educational institutions. Academic performance is the observable and measurable action of a learner within a specific time. Academic performance is a student's accomplishment score within the classroom and their performance on a standardized test in a school. Academic performance indicates the extent to which an institution of education students and teachers has accomplished their educational goals. It also comprises a score gained by a learner in an assessment activity, class test, and examination. Academic performance is affected by academic and non-academic elements like general intelligence, achievement

motivation, interest, internal control, academic optimism, viewpoint, instructional style, availability, and attitude toward teaching and learning material (Yusuf, Onifade & Bello, 2016).

Academic optimism is the capacity or sensitivity that achievement in the academic effort as accepted to disappointment will commonly happen when provoked with hard dares. The situation trusts that regardless of academic burden, problems, and assignments, there is all probability that everyone can quietly attain extremely in their academic attempt. Gradually, optimism states that an individual's optimistic approach is in particular conversational states or aspects. Optimism can be variable or cultured. It is the growth of a certain capacity to attain a specific objective. Academic optimism is prepared by academic emphasis, collective efficacy, and faculty trust. These multilateral options efforts together to tackle, inspire, and confirm the accomplishment of students in the institute. Academic emphasis is the mark to which educational accomplishment is arranged at the institute. Great learning concentrates on instructors continuously creating static that their learners are dynamically involved in related informational events to the point that their institute period is productive. Academic awareness is the first section of a greater theoretical framework of academic optimism that is confidently associated with pupil achievement (Waheed, & Leisyte, 2020).

Institute academic optimism is an underlying concept containing three interconnected substitute thought's cooperative ability, faculty trust in learners and their parents, and cooperative speculative emphasis. Experimental lessons have frequently originated optimistic connection between institute academic optimism and learners'

intellectual enactment, even after monitoring for the earlier concert, movement circumstantial or other analytical changeable (Wu & Lin, 2018).

The superiority of instructor-skilled progress is revolving crazy about extremely significant speculative stuff, as educationalists originate through collective analysis and pressure to raise pupils to attain advanced notches. While arguments and pressures above the way outline and focus on instructor skilled progress, instructors are predictable to achieve built on innovative and varying principles, and institute zones are asserting instructors to improve events over cultural responsibilities reaching from the meeting, training to a session of displaying (Margolis et al., 2017).

Student teachers' training and operating instructor-skilled progress can be essential for associate instructors to be actual trainers. Instructor learning involvements are related to optimistic properties on major institute culture products in small central revenue motherlands. Though, instructors in small central revenue motherlands frequently have nonexistent contact with an operating instructor skilled progress chances and, as in extraordinary-revenue motherlands, there is a significant difference in the ability of plans for mutual instructor and pupil learning (S. Sim et al., 2020).

Instructors are seen as significant to the achievement of learning improvements for the reason that there is a solid bond between instructors' efficacy and pupils' success. For that reason, here takes place a wide-ranging investigation examining how instructors reply to and execute fresh courses to confirm the achievement of learning improvements. This route of examination has described various experiments in pedagogical repetition encountered by instructors (Nguyen et al., 2021).

Instructive improvements and origination have a moment ago happened in utmost republics from corner to corner all God's creatures with a huge quantity of contributed currency and struggle. As a significance, several readings have observed the usefulness of the strategies and tactics of informative improvements and revolution. A lot of informative improvements, containing huge measure agendas in advanced states, take stated disappointment to accomplish the predictable products. This disaster, to a huge level, outcomes as of the deficiency of acceptance of instructors' requirements for qualified progress (Zein, 2017).

Instructor-qualified progress is far and wide prefigured as significant to refining learner products and attaining superior fairness. As a consequence, administrations all-inclusive fund billions in instructor-qualified progress year after year to improve instructors' information and run-through. from top to bottom worth of qualified progress is acceptable from the situation perspective to safe and sound developments in learner accomplishment terminated interval (Garrett et al., 2019).

An experimental confirmation has displayed that several qualified progress agendas are actual at refining how instructors take part in equipment in the teaching space. Instructors who are wide-open to class-qualified progress are additional to be expected to understand the growth in their abilities and talents (Xie et al.,2017).

Coaching is an essential profession in up-to-date culture, but several instructors invent themselves beneath constant pressure, roughly grief from despair. Encouraging instructor self-efficacy relieves the substantial pressure of effort, dipping supposed pressure and exhaustion. Agreeing withthe community reasoning line of business

philosophy, instructor assignation, and self-efficacy are equally connected (Granziera and Perera 2019).

1.1 Rationale of the study

Academic optimism is a general understanding of a school's strengths and positive qualities, including its faculty, staff, students, amenities, acquaintances, and other variables (Safari & Soleimani, 2019).

Academic optimism is based on the teacher's belief in their capacity to overcome obstacles and continue through failures, making a difference in student academic outcomes and the overall institutional quality. Positive academic optimism drives institute teachers to re-prioritize their personal development to support students and build on their teaching capacity. Teacher self-efficacy also has been correlated with positive faculty support and communication (Wong, 2019).

Teacher collective efficacy's limited effect on professional development reflects cultural and social norms in China, the impact of collective efficacy ought to not be ignored. School social climates are not static and can change with an effective policy maintained over time. Although established teachers may resist change, creating an environment that encourages personal development and reflection can be developed, as new teachers are more open to supervision and change (Hoque et al., 2020).

Academic optimism is a vital concept that can help schools overcome the challenges posed by students from low socioeconomic backgrounds. This study investigates the factors that influence the academic optimism of secondary school teachers (Üzüm, S., 2023).

Academic optimism perception has been examined relative to instructor professional development, learner success, effort assignation, and scattered management (Thien& Chan, 2022). This investigation proves primarily, that scattered management has a positive effect on academic optimism, that is academic optimism is associated with students' cultural accomplishment in addition to teachers' professional development. In those institutes with advanced academic optimism, a solid belief occurs between teachers, parents, and students in the direction of together, and the current belief that influences construct understanding between them perhaps will affect students' academic success.

The area in need of investigation is how to identify feasible strategies and techniques that can increase academic optimism and promote an encouraging work atmosphere for teachers. The available literature recognizes the importance of professional development and academic optimism, but it provides no specific guidance on how to achieve them. Identifying useful techniques that support teachers in encouraging and sustaining academic optimism is necessary to enhance teacher professional development.

This study would help teachers to improve their professional development skills. Academic optimisms monitor the overall environment within a school so, teachers can easily improve their skills. Teachers can plan activities that describe expectations for parents, trusting the teachers and their students by empowering them.

1.2 Statement of the problem

Teachers' academic optimism plays an important role in schools for developing the professionalism in teachers such as cooperative ability, encouraging students and positive attitude and belief towards parents and students. This study aimed to assess academic optimism of teachers. This study also aimed to find the relationship between teacher's

academic optimism and professional development of teachers. Furthermore, the researcher aimed to explore the prospects and implications of teachers' academic optimism and their professional development.

1.3 Research objectives

Following were the research objectives:

1. To assess the ways to improve the academic optimism of teachers for professional development of teachers at secondary school level
2. To find the relationship between academic optimism and professional development of teachers at the secondary school level.
3. To explore the implications of teachers' academic optimism and their professional development at secondary school level
4. To explore the prospects of teachers' academic optimism and their professional development at secondary school level

1.4 Null Hypothesis

The following hypotheses were designed for the study

H₀₁: There is no significant relationship between academic optimism and professional development of teachers at secondary level.

H_{01a}: There is no significant relationship between academic emphasis and professional development of teachers at secondary level.

H_{01b}: There is no significant relationship between collective efficacy and professional development of teachers at secondary level.

H₀1c: There is no significant relationship between trust in parents and students and professional development of teachers at secondary level.

1.5 Conceptual framework

Hoy et al. (2006) linked three important school traits that have a particularly positive impact on children's performance: collective efficacy, faculty trust in children and their parents, and collective academic emphasis. They did this by drawing on a large body of research. Theoretically, educators who feel that the group's efforts are helping their students as a whole are considered to be collectively effective (Goddard, Hoy, & Woolfolk Hoy, 2004). Faculty trust is the willingness of the team to be honest with parents and students because they think they would be well received by them (Hoy & Tschannen-Moran, 2003). The school's collective academic emphasis includes an emphasis on each student's academic progress (Hoy, 2012). Given that these three parameters appeared to be substantially related, the researchers also examined the underlying traits of each of them (Hoy et al., 2006). The positive outlook that underpins both efficacy and trust—both of which require taking a risk and placing faith in others—as well as the weight academic emphasis places on these feelings of optimism led the researchers to identify a latent construct known as school academic optimism (Hoy et al., 2006).

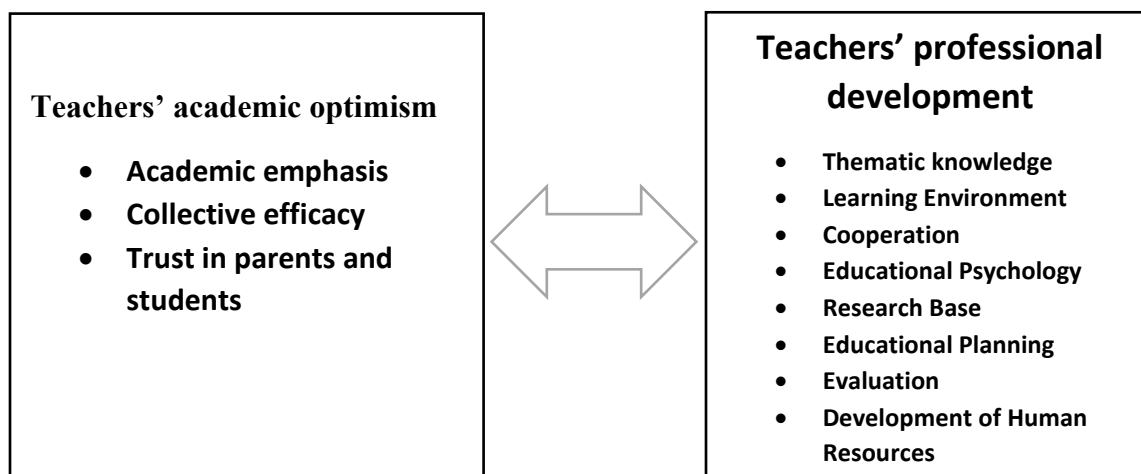


Fig 1(Theory of Academic optimism and student's achievement by Hoy, 2011)F

Academic optimism: Academic optimism refers to a set of beliefs and strengths of overall environment of school.

Professional development: It refers to civilizing teachers through learning training to advance students career.

Academic Emphasis

A set of beliefs about the strength and abilities of the school.

Collective Efficacy

Student achievement is positively impacted by the teachers' collective perception within the institution.

Trust in Parents and Students

Parents' readiness and pupils' assurance that both parties have depended on one another.

1.6 Significance of the study

This study would help policymakers to update policies that can promote a positive school environment and effective professional development. This study would also help teachers to improve their professional skills.

Further, this study would be helpful for teachers. Academic optimism provides the same culture for an institution and promotes a positive attitude towards the institution. As teaching is a continuous process of skills development to enhance student's outcomes.

This study would be helpful in instructional practices. Positive perception about the schools will lead to an emphasis on academics and encourage teachers to adopt innovative and effective instructional design.

Furthermore, this present study would be helpful for students. The ultimate goal of education is student success. Academic optimism will have a positive impact on student outcomes. A teacher's professional development within an academically optimistic environment will affect student's outcomes.

Furthermore, this study would be beneficial for parents. As the purpose of education is to nourish the knowledge and Skills of the students. As teacher professional development helps students to acquire knowledge in a new style. Teachers academic optimism helps to promote same culture for teachers to flourish their skills.

1.7 Methodology

1.7.1 Research approach

The main aim of this research was to find the relationship between teachers' professional development and teachers' academic optimism at the secondary school level.

The researcher used a quantitative research approach. The quantitative approach helps to collect large data and helps researchers to generalize the results to a large group of population.

1.7.2 Research design

The research design originated according to the objectives of the study. The researcher adopted the co relational research design. The researcher found the relationship between teachers' academic optimism and teachers' professional development.

1.7.3 Population

The population of the study consisted of secondary school teachers of public sectors in Gojra Muzaffarabad. According to Azad Jammu and Kashmir elementary and secondary education (2022) there were 21 secondary schools and 168 teachers teaching in schools. As the population were consisted of all secondary school teachers in Gojra Muzaffarabad so secondary school teachers from all previous sessions were included in population.

Table 1.1

Population of the study

Sr.	Number of schools	Number of teachers
no		
1	21	168

1.7.4 Sampling technique

A simple random sampling technique was used to select the sample of this study. There are six steps of sampling techniques. Defining the population, choose sample size, listing population, assigning numbers to population and finding random numbers.

1.7.5 Sample size

The sample was secondary school teachers of public sectors in Gojra Muzaffarabad. According to Morgan's table if the population is between 160 to 170 the accurate sample size will be 118. The researcher took 70% of the population as a sample size.

Table 1.2

Sample size of the study

Sr.	Population	Sample size
no		
1	168	118

1.7.6 Instrumentation

As data collection is a vital part in research. Data for this research was collected through two questionnaires. The researcher adopted two questionnaires as a data collection tools. The researcher used the questionnaire developed by (R. Lelieur, N. Clycq en J. Vanhoof) in 2020. The questionnaire consisted of three variable academic emphases, collective efficacy, and trust in parents and students. There were a total of 20 items, academic emphasis consisted of 6 items, collective efficacy consisted of 5, and trust in

parents and students consisted of 9 items. They follow the Hoy model that the researcher used in this study. On the other hand, the researcher also used the questionnaire that was developed by (Ali Asgari) in 2021. This questionnaire consisted of 8 variables and 47 items. Both questionnaires were based on a five-point Likert scale.

1.7.7 Data collection

Data were collected through questionnaires. The researcher personally visited each school to collect the required data and avoid any ambiguity during data collection.

1.7.8 Data analysis

The gathered data were entered into the software SPSS for analysis. The researcher used descriptive statistics and Pearson correlation to analyze the data and get the desired results.

1.8 Delimitation

This study was delimited to:

Gojra Muzaffarabad

All Public secondary school teachers of Gojra Muzaffarabad

Only male teachers.

1.9 Operational definition

Academic optimism: Academic optimism refers to a set of beliefs and strengths of overall environment of school.

Professional development: It refers to civilizing teachers through learning training to advance students career.

Academic Emphasis

A set of beliefs about the strength and abilities of the school.

Collective Efficacy

The shared perception of teachers in a school that has a positive effect on students' achievement.

Trust in Parents and Students

The willingness of both parents and student's confidence that both groups have relied upon each other.

Thematic knowledge

The teachers have an awareness of the teaching methods, curriculum, subject matter, and student needs.

Learning environment

It refers to using class time sensibly to transfer knowledge and improve students understanding.

Cooperation

Teachers that use the different techniques in small groups to cooperate with students.

Educational technology

The process by which teacher's added new tools and technology into the classroom to enhance students' achievements (Reiser & Dempsey, 2012)

Instructional technology

Subset of educational technology that focuses on methods and tools (A. Januszewski, 2008)

Research base

The method helps to block specific practice problems and gives a strong reference point to guide teaching.

Educational planning

Teachers working closely with the staff member to identify necessary problems of students for student improvements.

Evaluation

The method of assigning necessary skills to teachers for improving teachers' performance.

Strong relationship

A strong relationship means that the variables are closely related changes in one variable are consistently associated with large, predictable changes in the other.

Positive relationship

A positive relationship means that as one variable increases, the other also increases.

CHAPTER 2

LITERATURE REVIEW

The concept of academic optimism has been studied in connection to learner attainment, employment commitment, instructor-specialized expansion, and scattered guidance. This exploration exposes two things: first, that speculative positivity is surely squeezed by scattered guidance; and second, that speculative positivity is associated with both instructor's specialized expansion and learners' educational accomplishment. Earlier research has shown that learners' educational accomplishments may be recognized by the solid belief that parents, instructors, and pupils have in one another at institutes that have advanced speculative positivity. This belief may foster understanding between the parties involved (Thein, 2021).

Already stated that optimism is the state of positive anticipation of what lies ahead and expresses feelings, awareness, and inspiration for the future. A person's actions are affected by achievable objectives and their views about the future, which significantly impact current instincts. Academic optimism comprises trust, academic importance on both a personal and institutional level, and educational self-effectiveness. According to research, optimism plays a significant role in predicting both psychological health and academic success (Rand et al., 2020).

A classroom culture focusing on positive feelings and traits addresses teachers' weaknesses and fosters optimism in them so they can carry out lessons effectively. One of the most important concepts put out by PP is optimism, which encompasses faith, ownership, and a positive outlook on life and work. It is crucial in language education that

an optimistic teacher highlights the beneficial elements of their work, searches for answers to current issues, and plays up the advantages and strengths of their students, classes, schools, and networks (Pathak and Lata, 2018). A sense of academic commitment is another outcome of teacher optimism. It speaks to the degree to which educators are content with their profession and challenge themselves to demonstrate better job performance (Altun, 2017).

In recent years, there has also been a significant amount of study interest in the suggested connection between advanced student outcomes and teachers' professional learning (Shengnan and Hallinger, 2020). Since teachers are frequently required to participate in and learn from externally provided courses and training. Traditionally, courses or training from outside sources have been seen as the main component of teacher learning. Consequently, there is a natural limit to the teacher's freedom to select the theme and content of these exercises. (Tran and Le 2018).

Even though the advantages of academic optimism have been shown both empirically and theoretically it is still uncertain how to advance the idea and create an environment in schools where academic optimism is valued (Hong, 2017). Effective academic optimism evaluation methods that incorporate the sub-concepts are necessary, as is cross-cultural verification of those comprehensive instruments, to adequately fulfill the academic request for a more thorough study into academic optimism. meanwhile, these tools will be essential in creating a policy focused on the practice of academic optimism in schools. According to Creemers and Kyriakides (2015), policies that are evidence-based and based on valid measurement data will be more successful than programs and strategies that follow them.

According to Araujo et al. (2016), effective teachers have an enormous impact on students' performance during the academic year and into adulthood. Nonetheless, educators in middle-class and low-income nations frequently deficiency the skillsrequired to demonstrate children effectively. Simply 7% of fourth-grade instructors in seven African nations have the basiclowest of knowledge required to instruct in languages; in four of those countries, that percentage was zero. More than the 7% for language, however, just 68% of math teachers possessed the bare minimum of knowledge required to teach arithmetic, meaning that one in three teachers lacked the necessary skills. In addition, teachers' effectiveness in the classroom and their ability to plan lessons and create questions that effectively collect knowledge from students received terribly low scores in the pedagogical knowledge domain (Bold et al. 2017).

A trusting relationship whereby the employee feels comfortable being vulnerable and discussing strategies to enhance her performance or knowledge, face-to-face participation may be essential. Another factor that could lower accountability is a lack of personal contact. These trade-offs become especially clear when considering professional development funding for educators in poor nations. Low learning levels, extremely demanding learning environments, and poor teacher mastery of subject matter and pedagogical abilities make it essential to enhance teaching capacity (Bold et al., 2017).

According to Bayer (2014), among the most essential components of successful professional development are competent teachers who respond to particular teacher needs through professional development that calls for teachers' active involvement. Teachers' belief that all students can master the requirements is probably not entirely satisfied, which is mostly due to the inadequacies in quantity and regularity of professional development as

well as its generally poor quality. According to Snow et al., teachers' perceptions of these components' absence reveal weaknesses in the teacher's preparation for implementation.

Sub-Saharan African educators have weaknesses in several likely associated categories. They don't teach students well enough, and when they do, they lack the skills and knowledge required to do so effectively. Assuming that "adequate" instruction is defined as instruction from teachers possessing a minimum of pedagogical knowledge and subject knowledge in language and mathematics for every moment of the scheduled teaching day, then virtually none of the public primary schools in these nations provide instruction that is of a sufficient caliber (Bold et al., 2017).

The capacity of the institution to expand relies heavily on discipline, which is mostly utilized to inspire workers to be self-control in their work, both individually and in groups. Employees who are disciplined are better able to obey and value the rules, regulations, and policies that are in place to produce high-quality work. Since it raises the possibility of better work performance, the capacity to uphold staff discipline is essential to good human resource management. It is challenging for the company's organization to produce optimal results in the absence of strong staff discipline (Wang, 2019).

In Malaysian educational literature, the concepts of distributed guidance and teacher academic optimism are relatively recent. Thus, in the Malaysian context, the relevance of distributed leadership and teacher academic optimism is still substantially investigated. Growing research has focused on how distributed leadership affects teachers' academic optimism in many national contexts, including Saudi Arabia, Taiwan, and Canada (Alenezi, 2019).

Optimism is predictive of other psychological factors in the literature on the subject in academic settings. In addition to being less vulnerable, assertive, and possessing greater levels of self-concept and self-esteem, optimistic students who employ adaptive coping methods and have higher levels of academic and personal self-efficacy are also more likely to fulfill their goals in life. In particular, optimism is essential to how people deal with life's situations because it is throughout adolescence that people develop their mature selves. Last but not least, the assessment of academic activities during the learning procedure, both quantitative and qualitative, is referred to as academic performance. The scientific literature focuses primarily on two approaches to evaluating and figuring out students' academic performance: quantitative school grades and context and individual factors, which are more qualitative (Satici et al., 2019).

The concept of academic performance in adolescents is broad and has been studied from several aspects and conceptual structures. Adolescent students' personalities are shaped by a variety of intrapersonal factors, the most prominent of which are the motivational mechanisms that steer their conduct. Additionally, recognized the significance of the impact of sociodemographic factors in the setting most closely related to the student body (Pulido, 2019).

Shared decision-making performs a key role in the growth of professional learning communities in many schools, which gives teachers a feeling of empowerment. Teachers work to improve teaching and learning by adhering to the agreed norms of professional learning communities. The professional learning communities serve as an organizing framework for improvement in which members set shared objectives, strategies, and a

decision-making process for instructional modifications based on student data collection and best practices supported by research (Kruse & Johnson, 2017).

Academic optimism is a proactive sense of confidence in one's ability to thrive in school. Expectations of student motivation and achievement are based on this personal belief (Oludipe & Dixon, 2020). The first promoter of academic optimism was Hoy, who used the framework of social cognitive theory to claim that academic optimism, which is founded on a humanistic mindset, is one of the most important aspects of positive thinking.

Some variables inside as well as outside of the classroom influence students' academic success. In studies aiming at identifying school-related factors influencing the academic achievement of students, researchers have recently focused on the idea of teacher academic optimism. The academic achievement of students is believed to be impacted by the teacher's academic optimism. It makes sense that a research topic would be the teacher's academic optimism, as it is believed to have an impact on students' success, given that teachers are the primary factor influencing student achievement (Wagner, 2018).

Student academic achievement is a critical component of school activities, and school administrators are expected to drive positive change initiatives to enhance the learning environment. Though it is one of the primary variables influencing school progress, only a minor amount of research studies has set the standards for effective leadership practices at the school level. Several elements that affect educational results and school improvement are certainly impacted by a good leader. In a similar vein, it is critical for school administrators to invest in their faculty and other aspects of the school that support student achievement (Donovan, 2014). Furthermore, school head instructors have a direct effect on improving learner learning by shaping the school environment (including

shared goals, organizational culture, and procedures) and the classroom environment such as instructional pedagogy, classroom conditions, and instructional content.

Youth academic burnout is adversely correlated with task-oriented coping but positively correlated with emotion-oriented coping (Luo et al., 2016). According to Solberg, optimism, which aids in improved adjustment, is positively correlated with active and adaptive coping. Optimism was found to be adversely correlated with avoiding maladaptive coping, however. A more recent study discovered a direct correlation between optimism and adaptive coping in first-year college freshmen. Optimism is closely linked to adaptive coping since it appears that optimists respond to stressful situations by acting (Scheier, 2017).

Successful schools have collaborative teachers, who are also a strong predictor of many outcomes for students, teachers, and the school as a whole. It can support instructors in coping with pressures and psychological strain, encourage student accomplishment, and increase a school's potential for growth. Managing school personnel and creating a pleasant school climate are among the duties of the principal, one of the many school administrators. As a result, principals can now encourage and assist teacher collaboration inside their institutions (Li et al., 2016).

Research has looked at the associations between collective efficacy and teacher collaboration as well as principal leadership. The number and quality of teacher collaboration is anticipated through principal leadership, according to research findings (Voelkel, 2019). However, there has been conflicting research done thus far about the connection between the collective efficacy of teachers and the leadership of principals. Yet,

other research has discovered a statistically significant link between the collective efficacy of teachers and the leadership of the principal (Zheng et al., 2017).

According to McInerney et al. (2018), teaching has a reputation for being a challenging and demanding career. There is a claim that instructors have unique personality traits, worldviews, and cognitive processes that can greatly impact their choices and actions in the classroom (Nayernia et al., 2020). It follows that several psychological characteristics, including psychological well-being and self-efficacy, have an impact on teachers' performance in their professional careers. Over the past few decades, self-efficacy has gained increasing attention (Huang et al., 2019).

The collective efficacy of teachers has received less attention than individual self-efficacy. While teacher self-efficacy can influence perceived collective efficacy conversely, perceived collective efficacy can be viewed as the normative expectation of teacher self-efficacy. Significant is the fact that the empirical data currently available regarding collective teacher efficacy indicates a positive relationship between job satisfaction and collective efficacy, as well as an inverse relationship between teacher burnout and collective efficacy (Fathi & Savadi Rostami, 2018).

One of the key influencing components to students' related factors is teacher beliefs. Research indicates the relationship between self-efficacy and special education. Teachers who have a better sense of their abilities are more likely to participate in lesson planning and are viewed as more disciplined. This is a crucial factor to take into account because well-planned lessons may result in better student accomplishment. The results demonstrate the important but distinct relationships between stress factors and self-efficacy. These stress factors include emotional stress, emotional tiredness, involvement in teaching, and

motivation to leave teaching as a career. This is crucial since stressors like these have the potential to harm one's mental health (Seifalian & Derakhshan, 2018).

As students begin to mentally participate in scientific procedures and need opportunities to progress from curiosity to more sophisticated reasoning, the elementary school years are essential for science learning. Elementary schools are the first stop in preparing students for a career in science, as the demand for STEM degrees from the labor market in the United States and abroad is growing. It is estimated that the number of jobs in the STEM fields will increase by almost one million in the U.S. alone, and at exponential rates worldwide as society becomes more and more technologically and scientifically advanced (Benish, 2018).

Universities have become under increased criticism in recent years for the standard of their instruction and results for students, and expectations for their professionalism have grown. While it is still true that academics do not need a certified teaching certificate in the majority of universities across the world to teach, there are numerous opportunities for professional growth. New instructors are typically required to complete an orientation to teaching, but tenured faculty members must also adjust to the evolving role of the university teacher. The Horizon Report lists "rethinking the roles of educators" as one of the "wicked" problems that are "complex to even define, much less address" (Adams Becker et al., 2017).

To enable continuous professional development for all individuals who assist in the education of students, professional learning offers organized opportunities and experiences in certain fields. Reducing student outcomes inequality and enhancing learning for all children depend heavily on leaders receiving effective professional development. In this

study, equity refers to more than just equal access to opportunities for all pupils. Rather, equity focuses on reaching high standards for all students, with a particular emphasis on underrepresented social groups that educational systems have historically ignored. The fact that discrepancies persist indicates that, despite significant investment, current approaches to professional development have not had a significant enough impact on the leaders involved, much alone the students they serve. The outcomes of a successful professional learning leadership intervention for middle leaders are presented here, improving the reading proficiency of children who had not yet reached age-appropriate levels (Cirkony et al. 2021).

It has been stated that at least two, possibly implicit, theories form the foundation of professional development programs aimed at improving student achievement. First, there is the idea of teacher change, which asks what factors lead to teachers becoming more knowledgeable and how they alter their methods of instruction. In the second, theory of instruction, the focus is on what and how the altered instruction raises student achievement. It is impossible to determine where the model might have broken down without taking into account both hypotheses in studies of the effects of teachers. Thus, we investigate how professional development influences teachers' teaching of mathematics as well as how students' performance in mathematics is impacted by this instruction. But we also acknowledge that one of the two theories is frequently given more weight in certain research. Some academics have recently (Kennedy, 2016).

In developing countries, where pre-service teacher education must adapt in both scope and quality to meet changing educational demands, professional development for educators has focused increasingly on this issue. In Vietnam, administrators' and teachers'

capacity to pick up cutting-edge information, abilities, and attitudes on the job is a critical component of the success of education reforms, as acknowledged by the Communist Party and the government (Truong, 2018).

Researchers have examined the importance of principal leadership in school upgrading from a cross-country virtual perspective in several studies on school progress and principal leadership because to the extensive effect of international large-scale assessments. Leadership is said to have a minor but noticeable impact on students' academic success. Prior research on leadership has also identified "blank" and "blink" spots (Reusch, 2016).

2.1 Evolution from traditional to online professional development

Instructors who might not otherwise be capable of taking part because of limitations have the opportunity to grow through online professional development. These limitations consist of, but are not restricted to, travel distance and time. This paper presents a chronic periodical of pertinent research on the development of teacher professional development. The past aspects of professional development are followed by online professional development and its numerous delivery methods (Elliott, 2017). Five different distribution methods for online professional development were proposed by Little and Housand (2011). The five modes are: (a) accessible websites or online resources; (b) real-time technology communication with face-to-face audiences; (c) asynchronous online discussion-based professional development; (d) video conferencing; and (e) creating and facilitating an ongoing online community.

Professional development has evolved considerably since its beginnings. Nowadays, research is available on the characteristics of successful professional

development. Both traditional and online professional development fit this description. These characteristics must to be actively included by instructional designers in their programs for professional development. There are numerous uses for online learning. In addition to the educational sector, online learning is used in the military and business sectors. For both professional and student education, educators use online learning (Elliott, 2017).

To optimize student learning, every effective professional development approach should be standards-driven and customized to the necessities of the teachers. According to Lutrick and Szabo (2012), professional development should be interactive, collaborative, interest-driven, and differentiated. It should also be ongoing, constructed with pertinent and readily available materials, and appropriately implemented for best outcomes.

Professional development has been highlighted frequently. Though the core principle of professional development is that it will influence teacher practice in the classroom and, as a result, the standard of education that students receive, the application of theory to practice necessitates consideration of both the content and the process of teachers' learning (Kennedy, 2016).

Adopting new practices solely is not enough to engage teachers with a new pedagogy because their practical pedagogies have evolved out of their experiences in the classroom. This indicates that professors have developed a certain method of instruction and student response. Teachers who switch from one practice to another are effectively exposing themselves to a diminished degree of control and, as a result, in many respects return to the status of inexperienced educators. Consequently, a lot of educators require

time, support, and room to practice and think critically about pedagogy implementation (Biasutt et al., 2019).

2.2 Teachers academic optimism

Academic emphasis, teacher trust in parents and students, and collaborative efficacy are all components of academic optimism. Teachers' opinion that the faculty's efforts at school have a beneficial collective impact on the pupils is known as collective efficacy. A high feeling of group efficacy in the classroom establishes norms and behaviors that support teachers' self-efficacy beliefs (Meng et al., 2022).

According to Khodarahmi and Zarrinabadi (2016), when students' academic achievement improves, their efficacy beliefs—a cognitive aspect—increase. This, in turn, enhances the success of their education. Faculty perceptions of students' and parents' compassion, ethics, and transparency form the foundation of their trust. According to Beard, Hoy, and Woolfolk Hoy (2010), academic emphasis is on learning and specific school-related behaviors.

2.3 Academic engagement

Academic engagement was first brought forward as an approach of understanding and explaining academic failure, and it served as the foundation for initiatives aimed at reforming the educational system (Riffert et al. 2020). This idea is a reflection of learning engagement and homework, which is the active participation of a student in an assignment or activity. According to Ribeiro et al., (2019), academic engagement is the degree to which students make meaningful efforts in order to directly attain optimal outcomes from their educational endeavors. There are four components to academic engagement: cognitive, emotional, behavioral, and agent. Studies demonstrate that involving students in academic

matters and tasks to a larger degree increases the probability of academic success and reduces the risk of academic failure (Altinpulluk et al.2023).

2.4 Self-efficacy

In the framework of social psychology, Bandura initially established the idea of self-efficacy, which is the central component of the theory of social learning. Self-efficacy is a person's assessment of their capacity to plan and carry out a sequence of actions to accomplish certain pre-established objectives. Students who believe in their own talents are more likely to be diligent and persistent when faced with obstacles, as well as to engage more in training activities than students who doubt their own abilities. Individuals who think they are capable of performing a task or activity put in more effort and produce better outcomes. Academic procedures are outside the control of an individual with poor self-efficacy.

When someone of that type encounters obstacles in the classroom and is unable to overcome them despite their best efforts, they quit up right away. However, a person with high self-efficacy has perseverance when completing activities and feels that they can handle academic challenges successfully. Those who possess high self-efficacy are more self-assured than those who lack it. Strong self-efficacy enhances analytical thinking and problem-solving skills. Academic accomplishment and the elements of academic engagement are closely correlated with self-efficacy (Soland, 2019).

2.5 Academic emotions

Academic emotion holds particular significance among all the emotions individuals feel in their lives because most people attend schools and universities for extended periods and encounter a range of emotions in various educational contexts. According to

Muntanermas et al. (2017), the role that students' emotional and social learning plays in an educational system should be given top priority because these skills are critical to student's future success, and those who lack them are more likely to experience mental health issues, addiction, unemployment, and other unfavorable outcomes.

Students' mental health and academic success are seriously threatened by emotional and motivational issues. According to educational psychologists, learning and achievement are associated with both positive and negative emotions in addition to the knowledge and cognitive abilities that students acquire in a formal setting (Kwon et al., 2018).

Academic optimism anticipates favorable results. Optimistic individuals who confront challenges but may be able to overcome them look for responses, focus on their goals, adapt to essential principles, and exercise careful planning. Even though they may show signs of appropriate development, optimistic individuals are quick to offer you a perception of their power while confronting difficult situations. According to Miranda and Cruz (2020) optimism improves students in managing the challenges of education. Furthermore, research indicates that students who practice higher strength levels also exhibit higher levels of optimism. When faced with challenges, optimistic people perform better than less enthusiastic and optimistic ones (Pathak & Lata, 2018).

To reduce teacher turnover, implement curriculum innovations, approve discipline-specific changes, maintain program progression, sustain accomplishment, and enhance the depth of learners' improvement, commitment to instruction is crucial. Research has identified an essential range of variables that affect students' commitment to learning, including the need for studies examining the relationship between various skill areas and students' commitment to teaching others (McKim and Velez, 2015).

School principals are adept at multitasking. In addition to other academic obligations, they are in charge of managing the school's operations, student academic and nonacademic performance, creating a supportive teaching and learning environment, and developing the school's vision. They also offer guidance for projects meant to raise the effectiveness of the school. It seems difficult for school administrators to run a school on their own, particularly one that is huge. The era of exceptional solo leadership has come to an end (Adams, 2019).

Relevant theoretical and empirical research literature confirms that teachers' ethical organizational acts have a positive impact. Friedman also found that kindness is a major motivator for people to pursue careers in teaching. The teacher altruism scale's three sub dimensions—"social responsibility," "benevolence in emergencies," and "benevolence in the current situation"—may be correlated with their professional efficacy, according to more research. Surprisingly, research demonstrating the relationship between altruistic behavior and positive teaching characteristics has found that highly altruistic teachers are prospering in order to raise student accomplishment. Altruism reinforces the goodwill of teachers, power, hedonism, achievement, thrill, and self-control. Moreover, it is well known that altruism is a trustworthy sign of ethical behavior and excellent corporate citizenship. Sağnak has shown a direct correlation between mindfulness and the altruistic activities of teachers. While generosity reduces interpersonal conflict, generosity increases people's capacity for learning. According to Guinot, compassionate teachers are excellent at building a positive relationship with their students and motivating them to participate in the learning process (Friedman, 2016).

As a measure of a student's investment and engaged behavior in the learning process, academic engagement is one of the most significant markers of academic accomplishment. Both the educational process and students' socialization can be impacted by the presence of academic conflict. Empirical studies have demonstrated that pupils can achieve greater academic performance if they are more actively engaged in intellectual concerns and assignments. Factor, behavioral, emotional, and cognitive elements are all part of the multifaceted framework that is academic engagement. Participation demonstrating clear academic behaviors, such as making an attempt and persevering through setbacks when doing homework, attending class, and following regulations. Students' satisfaction and interest in difficult academic settings and their interactions at school, together with their cognitive engagement and readiness to learn a variety of subjects, have all been characterized as indicators of emotional engagement (Sabbaghi, et al., 2020).

2.6 Academic optimism of students

The term "academic optimism" describes a state of mind characterized by a blend of group efficacy and parental and student trust. Stated differently, this construct is one of the most significant and well-known aspects of personality that incorporates positive cognitions. In trying circumstances, optimism inspires people to strive for their objectives by assuaging their doubts and anxieties. Thus, pupils who have high levels of academic optimism are better able to meet their academic objectives. Another concept that affects kids' academic progress is academic hope. A common emotion that arises from the purposeful setting of objectives and the strategy for reaching them is the basis of academic hope, a cognitive ability. It's described as the hope for successful academic outcomes.

Optimism may prepare students for life and a better, more exciting future. It is intimately linked to academic performance. More positive and capable of reaching their objectives are those who are hopeful. Thus, academic hope implies that more hopeful kids perform better in school and in life by helping them to achieve their academic goals. Academic optimism and academic hope are important characteristics that influence the performance of applicants taking university entrance exams (Yazdanpanah et al., 2023).

The initial presentation of academic optimism came from Hoy et al., who contend that social cognitive theory serves as the basis for academic optimism, which is occasionally grounded in a humanistic mindset and is one of the most important aspects of positive psychology. A significant number of academics have studied academic optimism in America, Australia, Africa, Taiwan, Turkey, Korea, Pakistan, Nigeria, and Iran since Hoy et al. published their findings. This research also contributes to the development of an academic optimism construct by connecting it to other factors including school, teacher organizational behavior, community involvement, shared responsibility, future time perspective of potential teachers, and professional plans. Yet, according to self-determination theory, academic optimism is linked to basic psychological needs, academic conflict, and academic accomplishment (Ratnawati et al, 2021).

2.7 Optimism

The motivation for achievement and academic success is aided by positivity. Students with low optimism frequently commit infractions at school, which lowers their self-esteem. They also typically feel depressed, communicate poorly with teachers, and accomplish poorly academically. According to Schumacher's assertion, which was backed up by the assertion, pupils' performance is impacted when their positive attitudes about

schooling diminish. Optimistic students will struggle to realize their full potential and lack the motivation to accomplish their objectives. It will be challenging for students with optimistic tendencies to realize their full potential as they lack the will to accomplish their objectives. Academic optimism is the trust in oneself and one's capability to succeed intellectually. This personal principle states that pupils need to be successful and motivated (Dixon, 2020).

2.8 Self-efficacy of teachers

When discussing how a person behaves, feels, and reacts in difficult situations, self-efficacy is a common theme. It is also important for improving student performance, which facilitates academic advancement. A concept used in motivational psychology, teacher self-efficacy represents teachers' understanding and confidence in their ability to carry out their instruction. The idea originates from the intellectual societal theory, which emphasizes the importance of social practice and the learning process in shaping an individual's behavior. About this scheme, an individual's choice of a given situation is determined by his own observation, which forms his social manners and intellectual growth in the future, and the interaction of cognitive, interactive, and ecological elements influences an individual's behavior. Climatic elements relate to social norms, community interaction, and influence on others; experience, belief, and mindset are examples of cognitive characteristics. There's also evidence that self-efficacy affects performance instantly and is correlated with overall ability. Academic achievement and learner participation are enhanced when educators with high levels of self-efficacy adopt suitable academic approaches and methodologies (Ipek et al., 2018).

It is important for teacher educators to focus on the well-being of their teachers. They may help them organize their classes and early teaching methods and give them strategies for long-term professional success. When there is tension, they ought to place greater emphasis on the kinds of topics that promote positive feelings and learn to cope with negative ones. The review's findings draw attention to the state of intervention methods' treatment of positive attributes, specifically efficacy and optimism, which may help instructors improve their overall wellbeing. When language instructors are healthy, they will gladly use their creative thinking to come up with new projects and activities for the class, and their presentations will also have an impact on the students' academic progress (Birchinall et al., 2019).

We also look at career optimism as a consequence that new instructors may encounter in the classroom and with school-related elements. More broadly, optimism is the conviction that one's own future will be prosperous. Optimism has been connected to both physical and mental health, with research on the former suggesting that greater optimism is associated with less symptoms of anxiety and depression. Nonetheless, optimism differs significantly from mental health traits in that it focuses on people's aspirations for the future rather than their experiences or perceptions at that particular moment. As a result, optimism can be thought of as a different but related trait. Optimism is directly correlated with mental health, according to recent research on populations of teachers and general public, which also found that improving psychological health can boost optimism. In this study, we include both mental health and career optimism as outcomes of interest. Career optimism is thought to be the most reliable predictor of future teacher attrition (Savoie & Brunet, 2015).

It is similar to what other organizations define as innovation in education. Both the goal to be innovative and the setting in which innovation can be implemented are included in the definition of an innovative culture as presented in this study. When it comes to achieving organizational objectives, educational innovation is characterized as a purposefully designed, unique, and intentional modification that is thought to be more successful. Enhancement is what it seeks to do. Innovation can also be defined as "a practice or idea that reflects an emerging trend and suggests an optimistic possibility for current circumstances of disappointment." Three characteristics have dominated the discussion of innovation, despite the abundance of diverse definitions in the literature: innovation is basic in nature; it is intentional and planned; and it is done with the goal of improving things. Moreover, it takes three main phases to be innovative: an idea, putting it into practice, and the end product that makes a big difference (Serdyukov, 2017).

The success of teachers depends on a variety of internal and external circumstances, making it one of the most challenging and demanding professions in the world. That being said, group dynamics and psychological factors interact to produce effective education. When teachers have to deal with a variety of cultural and psycho emotional concerns in addition to linguistic differences, the complexity and stress involved in teaching second or foreign languages doubles. However, a large number of EFL instructors continue to employ themselves vigorously, sincerely, and sincerely in order to succeed and provide advantageous results in the classroom. When positive psychology emerged, it brought to light humankind's positive emotions, agencies, characteristics, and circumstances that allow for extraordinary growth and success (Wang et al., 2021).

In order to address instructors' weaknesses and build optimism in them so they can carry out education effectively, classroom environments that are focused on positive emotions and traits are crucial. A positive outlook on life and work, hope, duty, and optimism are some of the most important concepts. When it comes to teaching languages, it is crucial that educators remain passionate about their work, find solutions to challenges that arise, and highlight the good aspects of their students, classes, institutions, and networks. Within the academic community, optimism refers to a shared perception of a school's advantages and good aspects as well as those of its staff, facilities, connections, students, and teachers (Safari & Soleimani, 2019).

Effective teaching begins with a teacher's optimism, which derives from their sense of academic engagement. It's a measure of how content educators are with their work and how much they challenge themselves to perform even better. Or, to put it another way, dedication is a fundamental quality that influences teachers' productivity, attendance, persistence, and propensity for achievement. Factors that impact a teacher's work execution and teaching quality are both contextual and internal, or personal and internal, and they have an impact on this construct. A dedicated educator is eager to take on new duties and embraces the goals of the institution where they work with fervor and vibrancy (Sarıkaya & Erdogan, 2016).

At universities in the US, Australia, Canada, and the UK, professional development has been an essential component of instruction for over 30 years. In many European countries, professional development for academic professionals has long been neglected. In Germany, the number of such modules has significantly increased recently due to the

Bologna Process, whose goal is to guarantee comparability in the norms and quality of higher education diplomas across Europe (Wilkesmann & Lauer, 2015).

There is a good amount of research on teachers' professional development accessible, however collaborative professional development and basic training are not the same thing. It is asserted that by using educational initiatives led by subject-matter experts, instructional effectiveness can be improved. Community professional development, on the other hand, helps teachers advance effectively. Training and collaborative professional development are thought to be interchangeable and frequently intersect. Their conception of training consists of getting teachers ready for the classroom, including how to modify materials to meet the needs of students and facilitate group projects. Professional development, however, also covers teachers' awareness of their selves and the teaching environment; in certain cases, it even entails reflective teaching to provide a deeper comprehension of teaching practice. Educators need to know that developing professionally is an ongoing procedure that results in a substantial, logical, cultural, and emotional commitment to ideas, resources, and colleagues—whether in the classroom or not. Professional development is a complicated process that involves changing or raising awareness to enable teachers to bring about changes. Collaborative professional development is an effective strategy for influencing and integrating all parts of teaching in a teacher (Giraldo, 2014).

The quality of teachers' uses of educational technology and their access to professional development: Margaret's value and skill views play an intermediary role. Professional development is one strategy for assisting educators in making good use of technology. Nonetheless, little is known about the relationship between teachers' traits and

their exposure to professional development. This study looked at the correlations between teachers' exposure to professional development, their skills and principles, and the quality of their technology implementation as measured by Bloom's taxonomy. This study used structural equation modeling and a survey of middle and high school teachers to demonstrate how values mediate the impact of exposure to professional development on technology integration. The findings demonstrate that professional development could be most successful when it focuses on boosting teachers' values in addition to their technological proficiencies. Integration of Technology in the classroom, impediments to teaching, and Teacher Professional Development More and more research is demonstrating how important it is for educators to use technology to enhance their classroom instruction and student learning. Offering professional development is one of the most crucial methods to assist instructors in using technology more successfully. Training for professional development are available to in-service educators with the goal of improving their expertise, tactics, and other relevant teaching traits. The use of technology in the classroom by teachers can be improved by numerous professional development programs, according to empirical research. It is more likely that teachers who participate in high-quality professional development will perceive an improvement in their knowledge and competencies. Scholars have urged professional development initiatives to address teachers' value attitudes towards instructional technology use in light of new evidences and significance of these views in how teachers ultimately incorporate technology (Cheng et al., 2020).

Values and abilities are two more obstacles. Values include attitudes towards things, such as liking or disliking them, as well as opinions on the use of technology in the

classroom. Disagreement about one's perceived incapacity to use technology in the classroom is one example of a skillful assumption. In addition, Hew and Brush clarify that the ability to integrate technology is linked to the application of certain technologies, technologically aided pedagogies, and effective classroom management techniques. These two second-order hurdles are dependent on instructors' personal perceptions of how technology might or might not integrate into their methods of instruction. For existing technology and associated resources to be really used in the classroom, they are essential (Vongkulluksn, 2018).

Ability and value beliefs are important factors that influence technology integration, thus educational technology research should focus on finding ways to enhance these positive teacher attributes through professional development programs. Workshops for professional development could be totally voluntary, customized for a particular instructor, or mandated. Enhancing teachers' perceptions of their own abilities to integrate technology has been the main goal of most professional development initiatives. A couple of instances include Collaborative Professional Development for technology integration and Evaluating Digital Contents for Teaching and Instructional Excellence. According to Kim et al.'s (2020) year-long comprehensive professional development course, participants completed online modules in addition to in-person sessions. The knowledge and procedures involved in assessing digital learning materials and technology integration training intended to enhance instructors' pedagogical, technological, and subject-matter expertise were the main topics of these. In assessing digital information for use in the classroom, teachers gained confidence and familiarity. Supervised three pairs of mentor teachers and pre-service teachers in a professional development initiative. The pre-service

teachers each gave a class during one of four cycles of professional development, which included a mentor-led workshop on technology integration. Teachers' perceptions of their ability to integrate technology with their curriculum, tailored to specific subject areas, were significantly impacted by the program's implementation. Professional development initiatives aimed to increase teachers' comfort level and understanding of adopting technology (Liu et al., 2015).

Activities that enhance a person's abilities, knowledge, competence, and other qualities as a teacher are generally referred to as teacher professional development programs. The development of teachers' competence can take various shapes, including degree programs, seminars and workshops, coaching and mentorship, and casual conversations among educators. According to research on STEM education, professional development programs should help pre-service and in-service STEM teachers develop a professional mindset. They should also give them access to basic concepts in discipline and cross-disciplinarily, as well as pedagogical knowledge about integrating different disciplines through inquiry-based activities (Nadelson & Seifert, 2017).

For teacher professional learning, a number of school-specific conditions are outlined, including the amount of time set aside for professional development, the closeness of one's colleagues' workspaces and the availability and support of colleagues, the quality of the support provided, direction and oversight of learning processes, availability of resources and assistance, monitoring and assessment of teacher professional development at the school level, management support, and educational leadership. A significant body of research has been done on the relationship between teacher professional development and educational leadership. The results indicate that dispersed leadership

practices—or any related terminology—are most advantageous for the professional development of teachers. These terms include shared leadership, collective leadership, collaborative leadership, co-leadership, professional leadership, and teacher leadership (Grenda & Hackman 2014).

It is thought that professional development programs that specifically target teachers' competencies are crucial for fostering the growth of ideas, concepts, and behaviors. Although it's obvious that professional development courses need to cover more ground than just how to use the technology, not much is known about how effective professional development courses for mathematics are that use technology. Previous studies on professional development programs for using technology to teach mathematics were either qualitative in nature or concentrated on the ways in which participating in these programs led to changes in teachers' practices. Although this research is very helpful in highlighting the unique learning paths of teachers, identifying design principles, and expanding our understanding of specific professional development activities, it is still unclear what the actual causes of the various outcomes are. Although this kind of research is still uncommon in this sector, causality is typically proven by experimental or quasi-experimental designs using control or comparison groups (Sztajn et al. 2019).

It is frequently unclear whether the many initiatives created to support teachers' professional development in science and technology education actually lead to long-lasting improvements in teaching methods. Studies looking into the strength of these kinds of professional development programs, however, have produced insufficient or even unsatisfactory findings. This holds true for all forms of professional development, including lesson study and data use, not just professional development for science and

technology instruction. Following participation in professional development programs, educators frequently experience a partial or complete return to their "old" ways of teaching once resources and encouragement for their professional development are withheld. The quality of education that instructors offer is at risk, even when they make an effort to keep experimenting with their methods. This is because there is a greater chance of misconduct and mortal changes (Hubers et al. 2017).

It is imperative to determine if these programs meet the expectations of educators about their professional development, given that this is still regarded as a key driver of better science and technology instruction. These realizations aid in our comprehension of the reasons behind the success or failure of professional development initiatives in eliciting the intended responses and actions in actual educational settings. Practically speaking, such data is essential for fine-tuning a professional development program, maximizing its efficacy, and determining whether it is worthwhile to devote more time and money to it in the future. It is believed that in order to change teachers' teaching techniques, teacher learning is essential. Because of this, professional development initiatives are frequently employed to improve educational settings, particularly in the field of science and technology education (Sandholtz et al. 2019).

The term "professional development" is frequently used to refer to a wide range of possibilities for guided learning, from one-time workshops and consultations to extensive curriculum and communities of practice. It includes all initiatives and endeavors centered on professional development, training, and education with the ultimate objective of enhancing the educational or developmental outcomes for kids provide a conceptual framework that can be applied to the planning, execution, and assessment of successful

professional development initiatives. According to their approach, professional growth is composed of three interconnected elements that operate inside a larger framework. This approach has been utilized by numerous scholars to examine the efficacy of professional development (Romijn et al , 2021).

2.10 Teacher's collective efficacy

As per the social cognitive theory, the self-efficacy of a teacher is characterized by their self-assurance in their capability to arrange, scheme, and execute the essential tasks to accomplish their own educational goals. Each and every time someone acts. They decide to modify their future course of action in light of the lessons they acquired from the encounter after giving it some thought. Self-efficacy is the measure of a teacher's belief in their own capacity to impact their students' learning and engagement, particularly the difficult or disengaged ones. Four variables contribute to the formation of self-efficacy principles: mastery experience, vicarious experience, verbal persuasion, and physiological state. If educators believe they have the power to impact their kids' education, they will put in more effort, have higher standards, and be resilient in the face of difficulty. So, it makes obvious that there would be a relationship between students' academic success and teachers' perception of efficacy (I. A. Tekkol et al., 2018).

In terms of outcomes related to educators, individuals who have a strong sense of efficacy are happier in their jobs, are more committed, and have lower absenteeism rates. Teacher efficacy is connected with student-related results like motivation, achievement, and self-efficacy beliefs as well as the persistence, passion, dedication, and instructional activities of instructors (E. E. Lee et al.,2019).

2.11 Teacher's trust in parents and students

As a result of one's belief that the other will act in their best interests, trust is defined by a researcher as one's vulnerability to another person. Trustworthy relationships are defined by their sincerity, competence, flexibility, reliability, and kindness. Only when teachers have confidence in their student's ability to benefit from their efforts, honesty, and willingness to learn from educational experiences can a relationship of reliability be developed between them and their pupils. Holding children to high standards and looking to their parents for support in their achievements are only possible when a teacher has faith in their children. A trustworthy environment can forecast the conditions and results of an internal school (T. Matthews et al., 2017).

Trust appears to be a key component in developing solid relationships with the pupils. A teacher who believes in their students creates an environment where students are more eager to challenge themselves and learn from their errors. Scholars assert that this impacts students' academic achievement and often gives parents the impression that educators are driven to put in extra effort because it is what is best for their kids. A culture where people are encouraged to continue and realize their full potential is fostered by high levels of trust in schools, and these two factors are ultimately what lead to success. On the other hand, environments devoid of trust tend to make people less motivated to exert great effort (K. M. Fitzpatrick, 2017).

2.12 Teachers placing a strong emphasis on learning

Terms like "academic press" and "academic emphasis" are commonly used synonymously. The ability of a teacher to maintain students' focus on their studies while engaging them in social activities is known as academic emphasis. Academic emphasis is

said to be characterized by demanding but manageable learning goals, a serious and orderly learning environment, a strong desire to study, and a respect for academic achievement. Academic emphasis should improve the amount of time students spend successfully and actively engaged in academic tasks, as there is a favorable association between this and student learning. Academic learning time is important for students since research shows that learning and achievement are strongly connected with the length of time students successfully and intensely participate in academic activities. However, pupils do not devote a significant portion of their class time to academic work. To make their students' time in class useful, good teachers always make sure that their students take an interest in the proper projects (R. M. Ryan, 2020).

2.13 Components of Teacher Academic Optimism

Teachers' main sources of academic optimism are interdependent and functionally related. The establishment and maintenance of trust itself are preceded by the sense of teacher efficacy that is generated by a teacher's trust with parents and students. Because of this, when a teacher has faith in their parents, they can set high expectations for their kids, confident that the parents won't challenge them, and the high expectations also help to reinforce the teacher's trust. Therefore, when a teacher believes they have the ability to positively influence students' growth, they stress the significance of upholding high academic standards, which boosts their sense of efficacy. In summary, the interaction between each component of academic optimism leads to the sense of academic optimism among teachers. Additionally, it is believed that the cognitive, affective, and behavioral components of the academic optimism construct are academic emphasis, teacher self-

efficacy, and parental and student trust. The current study aims to investigate the following because academic optimism has never been studied in Pakistan (Leung et al., 2021).

2.14 Academic optimism of teachers

The term "academic optimism" describes the views held by educators and administrators on the performance of their students and the general efficacy of the school. It is made up of three parts: faculty trust, collective efficacy, and academic emphasis. Contrarily, teacher commitment describes the degree of devotion and allegiance that educators have to their work, their pupils, and the institution. Examining the relationship between teachers' perceptions of academic optimism and their dedication to their craft is the goal of this research. According to the experts' hypothesis, instructors' dedication and academic optimism are positively correlated.

Academic optimism refers to a broad appreciation of a school's advantages and good points, such as its staff, faculty, facilities, alumni, and other elements. With these qualities, a teacher may recognize opportunities in challenges and take the initiative to teach their pupils. Research indicates that optimism strengthens resilience, rapport in the classroom, self-efficacy, and confidence in both teachers and students, all of which contribute to academic performance (Lu, 2021).

Research was conducted in Iran by Ghasemzadeh et al. (2020). According to the findings, Academic Optimism and Enabling Structure are mediated by Affective Commitment. Affective commitment also serves as a bridge between intellectual optimism and group duty. According to the findings, there was a significant correlation between academic optimism and collective responsibility. Academic optimism has a substantial impact on teachers' organizational commitment in Malaysian secondary schools, according

to Ismail's (2021) research. This proves beyond a doubt that in order for educators to show their commitment to the company, they must believe they have the power to improve the standard of the teaching-learning process and devote their time and effort to doing so. The findings seem to support each other, demonstrating a link between instructors' organizational commitment and teaching process.

2.15 School innovation

Over the past 20 years, complicated school reforms and global competition have pushed schools to innovate in order to become more effective and obtain a competitive advantage over other educational institutions. Innovation has evolved into a crucial organizational strategy as a cultural trait (Nicholls, 2018).

In education, innovation is defined similarly to how it is defined in other institutions. According to this study's definition, a culture of creativity includes both the ambition to be innovative and the setting in which innovation can be put into practice. A purposefully designed, unique, targeted, and intentional modification that is thought to be more successful in achieving organizational objectives is referred to as educational innovation. Its objectives are to encourage advancements. Furthermore, according to this definition, innovation is "a concept or activity which demonstrates an emerging trend and offers an optimistic alternative for a current situation of dissatisfaction." Though there are many different definitions of innovation in the literature, three concepts have dominated the discussion of this concept: first, innovation is fundamental; second, it is intentional and planned; and third, the goal is to better things. Moreover, innovation necessitates three main phases: an idea, its execution, and the result that brings about a noteworthy difference (Serdyukov, 2017).

2.16 Enabling School Structure

Teachers and principals frequently criticize bureaucracy because of these two ideas, which link to rigorous rules and procedures that become a restrictive function and autocratic administration. Since bureaucratic structures present a number of obstacles to job fulfilment and have a detrimental effect on the professional practice of teaching, teachers frequently claim that schools are overly bureaucratic. The adverse effects of bureaucracy were validated by initial investigations. Teachers become more annoyed, experience more stress, and leave the profession more quickly. Educators are not the only ones who hold bureaucracies responsible for impeding learning and suppressing a positive school climate. Principals, bosses, and other members of the school community also hold this belief (Mitchell, 2019).

Reflection plays a major role in the long-term professional development and psychological health of educators. Reflective teaching is a crucial part of professional growth and education, and it's thought to advance lecturers' and teachers' professional competency. Since John Dewey introduced reflective practice, educational literature has extensively investigated and debated reflective teaching, which is regarded as an essential process in teacher education. By using reflective teaching, educators can also examine and challenge common language teaching conventions and routines, gain a greater comprehension of the teaching process, and encourage more innovative teaching techniques. The provision of high-quality teachers is of utmost importance in second language teacher education, as teacher reflection plays a vital role in closing the gap between theory and practice. (T. S. Farrel, 2014).

Academic engagement, which denotes involvement and engaging behavior in the learning processes of students, is one of the most significant predictors of academic accomplishment in students. Conflict in the classroom can have an impact on pupils' socialization as well as their education. Studies have indicated that students' chances of academic achievement can be increased if they are more actively involved in learning tasks and academic challenges. Emotional, cognitive, behavioral, and factor dimensions are all part of the multifaceted framework that is academic engagement. Behavioral engagement to visible academic behaviors, such as effort and tenacity in the face of difficulties and obstacles when doing assignments, attending class, and abiding by school regulations. Pupils who are emotionally engaged are those who enjoy and are interested in tough academic settings and their experiences at school; they are also cognitively engaged and prepared to learn a wide range of courses (Lazarides, 2020).

2.17 Student's academic optimism

Three elements comprise the new field of student academic optimism: students' academic emphasis, students' sense of identity towards school, and students' faith in teachers. Academic optimism is actually a positive personal conviction held by students that they can help themselves achieve academically by putting an emphasis on their study, having faith in their teachers, and feeling a sense of belonging to the school. Research history has demonstrated that academic optimism is a necessary component in another person and plays a significant impact in students' academic conflict. The sense of competence may act as an observer of academic disagreement. It refers to a person's capacity to successfully manage the responsibilities and difficulties of daily living. According to the notion of self-determination, it has been defined as a psychological requirement in order to be practical (Demetriou, 2020).

Distributed leadership and teacher academic optimism together are relatively new ideas in Malaysian educational literature. Thus, in the Malaysian context, the relevance of distributed leadership and teacher academic optimism is still largely investigated. The effect of distributed leadership on teachers' academic optimism in many national contexts, including Canada, Taiwan, and Saudi Arabia, is gaining attention. Furthermore, in order to broaden the bodies of knowledge about dispersed leadership and teacher academic optimism, these empirical researches have emphasized the significance of connecting the dynamics of successful school leadership and teacher optimism to various national settings (Clarke, 2020).

In order for professional learning communities to be fruitful and successful, the educational setting must provide a few enabling conditions. In order to work towards school development, teachers require a location and a time for meetings, as well as the social skills to build cooperative relationships with their colleagues. Teachers should work together to enhance teaching techniques, promote one another's professional development, and share knowledge via professional learning communities. In professional learning communities, professional development and collaboration among instructors can only take place under specific institutional conditions, according to Kruse. These prerequisites consist of: setting aside time for conversations and meetings; being physically close; having interdependent teaching positions; having communication networks; empowering teachers; and having school autonomy. By providing time during regular work hours for professional learning communities and shielding this time from disruptions, school administrators can assist teachers in their efforts (Park et al., 2019).

According to Hoy, there is a mutual and temporal relationship between academic emphasis, collective efficacy, and instructor trust in clients. There is a tendency for collective efficacy to rise as teacher trust in parents and students grows. The bonds between educators and parents are reinforced when they have high expectations for their pupils' academic performance, a strong sense of group efficacy, and trust in both parties. While cultivating an optimistic school culture towards learning, academic success, and school achievement, these three facets of academic optimism interact with one another. Everyone involved can succeed academically when educators have faith that every kid can learn and are willing to work together as a team to serve customers (Gray et al., 2017).

The concept of collective efficacy pertains to the mutual conviction among organizations regarding their combined ability to plan and carry out the necessary actions to achieve specific goals. Collective efficacy is a norm-based concept that represents teachers' opinions about their colleagues' capacity to teach students. Among school-level factors, collective efficacy explains a greater amount of heterogeneity in teacher trust in clients. Teachers are more willing to work harder and longer to meet organizational and academic goals when the school has a strong sense of collective competence. So, collective efficacy measures the faculty's overall assessment of the group's capacity to organize and deliver instruction (Voelkel, 2017).

Academic progress is greatly impacted by an intellectually upbeat school culture where staff and administrators' organizational citizenship and collective efficacy are essential to student learning. A large portion of the present literature focuses on academic advancement and active learning teaching techniques. According to recent findings, two research examining school environment and culture have an impact on students' learning

advancement. During the investigation of disparities in school climate, or the physical and social conditions of the learning environment, and its consequences for academic achievement in California, active learning teaching strategies were examined as a means of promoting inquiry while promoting equity in the classroom. The California School Climate Survey and administrative data were used by the researchers to look at how school climate differs by school-level factors in California. Researchers discovered that "teachers at low-performing schools, large-city schools, low-income schools serving Hispanic and Black students, and comparatively to their counterparts, secondary school teachers reported lower levels of favorable school climates, including relationships between staff and students, norms and standards, student facilitative behaviors, and felt safety. This finding is consistent with previous trends in educational inequality (Tang et al., 2017).

The significance of a healthy school culture that emphasizes teachers' capacity to collaborate to build a supportive school environment that meets all kids' behavioral and academic requirements has also been acknowledged by federal directives. "Positive Behavior Interventions and Supports" was added as part of a modification to the Individuals with Disabilities Education Act, and it is still contained in the revised form of the statute found in the Technical Assistance Centre on Positive Behavioral Interventions and Supports. To establish a pleasant school atmosphere, positive behavior interventions and supports must be implemented throughout the entire school. Research on schools who faithfully adopted PBIS have shown improvements in teachers' evaluations of the general health of the organization and stronger teacher perceptions of trust, among other indications of advanced student accomplishment (Kim et al. 2018).

Academic optimism and the contact between teachers and students have a significant impact on students' online academic achievement. The term "online teacher-student interaction" in this study refers to the level of communication and interaction that occurs between instructors and students during an online learning session. Online teacher-student interaction is a significant environmental factor influencing online academic success because it is an actual demonstration of social interaction in the learning process. The main cause of students' poor performance in online learning, according to studies conducted on online classrooms, may be the absence of teacher-student interaction. Prior research on online contact has shown that students perform better on the basis of social connection and active learning. But they only look at student-student and teacher-student interactions as a whole, failing to investigate the connection between online teacher-student interactions with learning outcomes or experiences (Martin, 2021).

The extent of a student's engagement with, commitment to, and participation in extracurricular as well as academic activities is referred to as their academic engagement. According to Abbas (2018), it was a student's effort focused on their academic work. Academic engagement, in its context, refers to students' active involvement and dedication to academically relevant activities for personal growth. The concept of academic involvement has several facets. For instance, one school of thought offered a model with three interconnected aspects of behavioral, cognitive, and emotional engagement; another, the subject of this study, offered three dimensions of engagement: absorption, vigor, and dedication. Schaufelli's model of academic involvement is said to incorporate three dimensions: vigor, devotion, and absorption (Truta et al., 2018).

The ability of pupils to demonstrate a high degree of mental energy while studying, as well as their determination to put forth effort and continue in the face of disappointments while keeping a positive outlook on learning, is referred to as vigour. Students' excitement and commitment to their academics are signs of dedication. Students who are deeply engaged and fully focused on their studies are said to be in a state of absorption. This makes intellectual engagement the defining characteristic of students' academic achievement. However, the difficulties educators encounter in getting students to pay attention to instructional materials and to support their learning through academic engagement are present in all educational levels (Oriol, 2016).

Success in school in their pursuit of academic success, students who possess motivation demonstrate a self-sustaining drive and determination. In short, it's the will to excel in academic activities. Among the three elements that comprise McClelland's theory of human motivation, achievement motivation refers to the drive for success or the pursuit of academic brilliance. n-Ach stands for "need for achievement," and it was first used by David McClelland and colleagues in their theory of motivation. According to this hypothesis, when given the right incentives, people would act in ways that will benefit them. Purposefully, the pressure to perform at a set level affects every student. The pressure to perform may be strong in certain kids. However, it may be low in others (Ebenebe, 2019).

Expectations of good and pleasant things happening in the future are referred to as optimism. Stated differently, it could be interpreted as attributing a favorable meaning to achieving success both now and in the future. The capacity for students to think optimistically and have faith that their academic activities will succeed is known as

academic optimism. Hence, optimistic learners are those who approach each academic task with hope, plan, and strive for the greatest results. As such, students who approach their academic lives with optimism ought to hold high hopes for their academic performance. A high level of academic optimism indicates that pupils place a high value on their academic performance. Likewise, it was discovered that optimism and self-esteem have a favorable relationship. This suggests that a lack of optimism might result in low expectations, which can cause a student to work less, become more passive, and give up on their objective more quickly. Proving the claim that negative people are less content with life and that a lack of optimism has this effect (Afriwilda, 2019).

There was no apparent difference in the sub-dimensions of the perceived major management style scale when the scale's gender component was looked at. There was found to be a substantial difference in the sub-dimensions of trust and academic emphasis of the scale when teachers' opinions on the academic optimism of schools were analyzed based on their gender. When it came to the sub-dimensions of academic attention and trust, male teachers assessed their schools as being more hopeful than female teachers. The sense of trust towards the school and its surroundings may have increased since male teachers are abler to communicate with the surroundings (Deniz, 2017).

Establishing high standards for both students and teachers, maintaining a disciplined and orderly environment that supports learning, placing a strong emphasis on the development of fundamental skills, and keeping track of students' development are some of the key elements of an effective school. These abilities play a role in both academic emphasis and student academic accomplishment. The combination of teachers who set challenging but realistic goals, students who rise to the occasion and a principal who

provides the means and exploits the system to achieve those goals is known as academic emphasis. This study's definition of student academic accomplishment is the objective results of standardized examinations that assess students' proficiency in the range of courses taught in schools, particularly the core subjects. The selection of academic achievement among students aligns with current studies that investigate the efficacy of schools using academic achievement among students (Jarl et al., 2021).

Academic accomplishment and emphasis on the arts reflect a school that maximizes its people and physical resources to accomplish its objectives while preserving the health of its faculty and students. This school works methodically and continually towards self-improvement. Therefore, regardless of the socioeconomic makeup of the student body, the goal of school effectiveness is to support kids' academic and social results (Ramberg et al., 2019).

Studies dating back to the 19th century have attempted to pinpoint the elements of professional growth that raise student achievement. Researchers couldn't agree that much despite extensive research in the years that followed. But more recently, several reviews have come to the same conclusion. Professional development that is practice-based, collaborative, subject-specific, teacher-bought, extended, and focused on outside knowledge has a higher chance of raising student achievement. Based on these reviews, two meta-reviews that further support these guidelines have been prepared (Cordingley et al., 2015).

Although many programs have been created to support teachers' professional development in science and technology education, it is frequently questionable if these

efforts lead to long-lasting improvements in teaching methods. Studies looking at how long-lasting these kinds of professional development programs and meanwhile have resulted in disappointing findings. This is true for professional development in science and technology education as well as for all other forms of professional development, such as lesson study and data utilization(Wolthuis et al. 2020).

Teachers frequently return to their "old" ways of teaching after participating in professional development projects, or they may make only minor adjustments to their methods after funding and support for their efforts are withheld. Instructors run a greater risk of misapplication and "lethal mutations" even when they make an effort to keep evolving their methods, which could compromise the standard of instruction, they give. The question of whether these programs meet this expectation must be answered, but since professional development for teachers is still seen as one of the key elements promoting better science and technology education. These revelations assist us in comprehending the reasons behind the success or failure of professional development initiatives in eliciting the intended practical reactions and changes in teaching methods (Wolthuis et al. 2020).

We consulted review studies and meta-analyses that had either been part of large-scale government-funded projects or had undergone peer review to give reliable indicators of effective professional development initiatives. Four studies in all were used to draw findings specifically for science and technology education, and seven research that examined teachers' professional development programs throughout a range of subject areas was utilized (Maandag et al. 2017).

2.18 Professional development

Professional development is the term used to characterize a wide range of possibilities for guided learning, from one-time consultations and seminars to extensive curricula as well as networks of practice. To improve children's developmental or educational results, it includes all initiatives and activities centered on professional training, education, and development opportunities. Construct a conceptual framework that can be applied to the planning, execution, and assessment of successful professional development initiatives. Professional growth is viewed by their framework as three interconnected parts that operate inside a larger framework. The success of professional growth has been studied using this paradigm by several academics; however, they admit that the model is devoid of theory regarding the fundamental factors that promote change. We embrace an in recent times recommended theoretical model of space as a means of accounting for this fundamental mechanism, which is known as the change of innovative levels of appreciative into maintainable performance (Romijn, 2017).

There are several definitions for professional growth. Professional development can be approached in a variety of ways. Positive skill progress is what is meant by professional development. The term "professional development" in education can be used to describe a broad range of formal education, advanced professional learning, or specialized training meant to assist administrators, teachers, and other educators in enhancing their professional knowledge, competence, skill, and effectiveness. Training and ongoing practice are two ways to attain professional development. Professional development cannot provide satisfactory and anticipated results without training. Professional development, which includes on-the-job training activities stretching from recognized, lecture-style training to mentoring and coaching, is the main instrument used by nations across the income

spectrum to improve the knowledge and abilities of their practicing teachers. Though there are many professional development programs, only a small number of them undergo thorough evaluations, and the data supporting their efficacy is highly inconsistent. Certain initiatives are successful; in Uganda, for example, teaching literacy in the students' mother tongue significantly improved reading comprehension. In Liberia, similar initiatives trained teachers to assess students' performance more frequently and modify their instruction accordingly (Kerwin and Thornton 2021).

The terms "content knowledge" and "methods of instruction" relate to the subject matter. Making sure that professional development material is explicitly and contextually related to classroom practice is an essential component in providing instructors with chances for meaningful learning. More than just conceptual information is included in the term "content" in science education. It also includes knowledge of scientific procedures and practices as well as the process by which scientific knowledge is created via inquiry. Suggested that a shift from a traditional method to a more inquiry-based approach necessitates a significant level of subject understanding based on their analysis of professional development programs centered on inquiry-based science. Thus, it may be difficult for elementary school teachers, who generally possess little understanding of science, to assist their pupils with this task. Teachers who are engaged in activities that allow them to draw links between what they are learning and what they are teaching in the classroom are said to be practicing active learning. In professional development programs, teachers should be modeled inquiry because they frequently find it difficult to teach science as inquiry. For the purpose of sharing experiences, reflecting on their own learning, and figuring out how to apply professional development material to their teaching, teachers

require sufficient time and chances. In order to promote active learning among teachers, teacher educators must pay close attention to the insights gained from collaborative reflection. This will enable them to gain a deeper understanding of teacher learning and make informed plans for future actions (Darling-Hammond, 2019).

2.19 Students learning achievements

The term "academic achievement" refers to the results of learning that are usually evaluated by external achievement exams, classroom evaluations, and grades. Alternatively, to state it another way, the degree to which a particular student has mastered the course material is what is meant by student learning achievement. The extent to which students have mastered the language learning materials is also a factor in determining their learning achievement in language learning programs. Teachers are seen as the primary knowledge providers in classroom settings, and as such, they are thought to be crucial in fostering students' academic success. Indeed, scholars generally agree that variations in students' performance levels might be linked to the qualities of their professors. Several academics have examined the role of instructors' personal and professional attributes in students' learning accomplishment, among other things, in light of the idea that teachers can significantly alter the achievement levels of their pupils. The term "personal resources" or "teacher personal traits" describes the material and psychological resources that educators bring to the classroom. On the other hand, characteristics that instructors acquire in educational settings are referred to as teacher professional attributes. A lot of research has been focused on teacher professional growth as a significant example of professional qualities (Kola et al., 2015).

The definition of teacher professional development is "those procedures and activities intended to improve educators' professional knowledge, abilities, and attitudes so they might, in turn, improve students' learning." Consequently, the teacher needs and interests must be the center of professional development if it is to be effective. Furthermore, maintains that the possibility of learning and assisting in the development of their students is the greatest incentive for instructors to study. Currently, there are numerous options for teacher preparation, and the content and approaches of these programs differ. Some of them seek to enhance and refresh teachers' knowledge; others concentrate on helping them acquire new skills and professional competencies; still others emphasize how their work should complement and reflect teaching practice (Major & Watson, 2018).

Self-directed professional development requires strong moral integrity in teachers. To manage one's own professional development, three requirements must be met: the freedom to select objectives, the availability of both human and nonhuman resources to help achieve objectives, and the personal aptitude needed to accomplish objectives. Above all, self-directed professional development requires motivation for the field in which one works. People that are motivated by intrinsic factors tend to be more thoughtful, proactive, and aware of their surroundings. Today's classrooms require self-direction in order to implement appropriate and useful changes. Improved education and significant progress are achieved through the use of the self-directed learning professional development strategy. Conferences and one-time workshops don't produce as much effective professional learning as continuous, well-planned self-directed professional development. Accordingly, professional growth and high-quality education that corresponds to each

person's needs, preferences, and decisions are increasingly relevant when it comes to self-directed professional development (Soebari & Aldridge, 2015).

Since professional knowledge of teachers has been demonstrated to be a significant predictor of instructional quality, it may come to be the Centre of attention. There are generic frameworks available that handle the knowledge required in the context of digital transformation. The Dig Comp framework, released by the European Commission, could have an impact on Europe. Information and data literacy, digital content production, digital collaboration and communication, maintaining digital safety, and technical problem resolution are its five facets. The Dig Comp Education framework expands upon the basic Dig Comp by including additional features that are essential for educators. DigCompOrg is a framework that addresses the organizational integration of digital learning, which is a companion to Dig Comp. Particularly in the research-focused literature, the concept has drawn a lot of interest. Drawing from technical knowledge adds another dimension to pedagogical and subject expertise. A blend of content, pedagogical, and technological knowledge is required for the effective integration of technology into a particular subject. The framework has had challenges despite its broad use. Graham contended that it is sometimes difficult to distinguish between the three components, that their relationship needs to be made clear, and that it is unlikely to be useful for predicting significant consequences. Additionally, it discusses how to use technology in teaching. It appears unclear whether it could also advance knowledge of how to include technology-related topics in training. In general, research on teachers' professional understanding of teaching technology-related content presents new constructs instead of referencing the framework. Two such instances are "Teaching in a Digital Environment Capacity" and "Teachers'

Emphasis on developing students' digital information and communication skills (Claro et al., 2018).

There has been a shift in the way educators acquire knowledge and grow as professionals. In the past, teacher mastery of particular skills and competencies has been emphasized through professional development through isolated events like lectures and workshops conducted by outside specialists. Such development was frequently predicated on the deficit theory, which holds that instructors must receive expert instruction because they lack the necessary knowledge and abilities. Since this method of professional development is top-down and created outside of the teaching context, which could impede growth and, frequently, be ineffective for educators. It should be noted that performativity and accountability have an impact on teacher professional development, which leads to teachers having less control over the procedures and less significance for their day-to-day work. The authors therefore make the case for a pragmatic model of professional development that emphasizes intentional professional learning aimed at bettering student outcomes and goes beyond performativity. This is also consistent with other methods that emphasize professional learning for teachers, which contrasts with professional development that is "event-based." These are bottom-up, context-specific, collaborative practices that teachers use daily. They are born out of identified needs for teacher development.

Additionally, the growth of teachers depends on the process of evolution, and these processes are cyclical rather than reestablished. In addition, they are instructor-driven, intended to enhance student learning, and useful for teaching practice (Lloyd and Davis 2018).

2.20 Collaborative professional development for inclusive education

In various locations and cultures, the term "inclusive education" has varied meanings. To capture various elements of the findings, the discovered papers underwent analysis. First, the various definitions of inclusive education and professional development that the researchers have employed were analyzed. Subsequently, the results reported in the published research were detailed, together with the theoretical and methodological viewpoints. The review's findings can be utilized to build a compiled resource for field study, help with decision-making, or influence the planning of group professional development. Additionally, the research gaps found in this analysis and synthesis might be used to propose new research areas to advance teachers' professional development for inclusive education. It was noted that inclusive education offers alternative approaches that are based on different philosophies (Hornby, 2015).

2.21 Pedagogy and Professional Development

The concentration on content has, however, narrowed the field's study area, so that considerably less is known about the potential of pedagogy-focused professional development. Studies on professional development that is content-focused typically focus on certain subject areas, such as science, math, and English. The question of pedagogy is how to teach a subject to students in the most effective way, frequently pointing to the persistent idea of "pedagogical content knowledge." As such, in professional development collaborations, instructors usually work with peers in the same subject area or grade level. However, there is a lack of literature on collaborative professional development involving teachers from diverse grades and subjects, despite some recent research suggesting that

such collaboration can help teacher learning when it comes to discrete teaching techniques (Gore et al. 2015).

2.22 Quality teaching rounds

In schools, effective lesson plans are implemented without further assistance from outside sources. A small professional learning community, comprising educators from all backgrounds and grade levels, school administrators, novice instructors, and student teachers, is formed around the work of teachers during quality teaching rounds. Four sessions make up a round, which occurs during a single school day. Educators first gather to talk about a chosen professional reading. As a result of this conversation, educators are inspired to exchange thoughts and viewpoints and establish a shared framework for their group lesson analyses. Second, a member of the professional learning community imparts knowledge while the other members watch. Third, the lesson is personally coded following the quality teaching model by every member of the professional learning community, including the "host" instructor. Lastly, to come to a consensus regarding the course's quality and the coding of each component, the professional learning community deliberates over the taught lesson (Bowe and Gore 2017).

2.23 Students' academic achievement

The educational atmosphere has an impact on students' academic success. A well-designed classroom facilitates easy peer interaction and the development of language and social skills in young learners. Child mobility may be hampered by an unorganized classroom, which may lead to issues with social behavior. For students to succeed academically, the physical atmosphere of the classroom is critical. Physical classroom qualities are defined as the physical environment. Everything from the size of the

classroom to the floor, walls, desks, lighting, school structure, school climate, computer, and so on makes up the physical classroom environment. Therefore, to improve students' academic performance, the learning environment should continue to be researched and effectively maintained. However, Academic achievement is adversely affected by inadequate maintenance of school buildings, crammed classrooms, poor lighting, noise, elevated carbon dioxide levels, fluctuating temperatures, inadequate ventilation, inadequate power supply, water, recreational facilities, inadequate health facilities, and a lack of furniture. Consequently, it is accurate to state that the availability of educational resources and facilities and academic attainment are closely related (Adeyemo&Ejikeme, 2018).

2.24 Student Motivation

Research has demonstrated that improved learning environments and student motivation are positively correlated. Well-designed classrooms with sufficient space for learning, audio-visual study settings, and e-learning resources all boost student motivation, which in turn results in academic success. Alzubaidi investigated the relationship between the learning environment and motivation of pupils. They discovered that there are significant relationships between the learning environment of students and the improvements they make in terms of motivation and self-control. Additionally, it demonstrated how an improved learning environment might affect students' self-motivation (Baeten et al., (2013).

2.25 School climate and academic achievement

Some researchers have shown no relationship or a negative relationship between school climate and student academic accomplishment, while others have discovered that

school climate positively affects student achievement and that a positive school atmosphere is vital for academic success. Situations, where additional variables are influencing the link between concepts, are typically characterized by inconsistent findings. So we searched for a possible variable like that (Bear et al., 2014).

2.26 Self-efficacy, school climate, and academic attainment

Measures of general mental capacity are followed by academic self-efficacy as important determinants explaining student accomplishment in academic settings. This notion has been widely substantiated by the social-cognitive theory of agency. According to this view, people are not only passive participants in their situations in life but also active agents in them. Put differently, learners who possess agentive can evaluate, act upon, and adjust their academic behaviors in response to their experiences to improve their performance. There is a lack of research and inconsistent results from mediation models that examine the relationship between organizational-level concepts and personal-level perceptions (Cheema & Kitsantas, 2014).

The demand for thorough and organized teacher development and preparation continues to rise. To improve teacher quality, several research studies have emphasized the advantages of providing in-service teachers with professional development opportunities. The empirical research unequivocally demonstrates that the caliber of instruction greatly influences students' learning outcomes (Niemi, 2015).

High-performance standards are set, school-wide goals are promoted, and a common vision for the school is formed by effective principals. They cultivate human capital among educators and offer tailored assistance for staff advancement. A school's instructional goal is managed by effective principals who place the school in a larger

community context and provide teachers with focused instructional assistance. This fosters parent and community engagement. The biggest direct impact principals have on student progress is through instructional leadership. It has been discovered that thorough instructional training, such as pre-and post-observation conferences when principals provide teachers with in-depth feedback about their instructional performance, is favorably correlated with student progress (Steinberg & Sartain, 2015).

Principal human capital is developed and improved through two professional development pathways. Before taking on the role of principal, candidates may first take part in pre-service training. Second, after assuming the principal ship, principals are eligible to take part in in-service training. We distinguish between two types of in-service training: continuous professional development and induction. In order to keep their active principal license, principals are usually required to participate in ongoing professional development, which is geared toward more experienced principals. Induction is an in-service professional development program for new and early-career principals. As this study looks at principal induction for new and early-career principals, we concentrate on in-service professional development. Although the effectiveness of in-service induction for early career principals as a means of principle professional development is not well-supported by comprehensive research (Rowland, 2017).

It has been repeatedly shown that curriculum-focused professional development that engages teachers in active, collaborative learning, is sustained over time, and aligns with the priorities of both schools and teachers leads to improvements in the knowledge and practices of educators. More recent research has broadened this agreement, supporting teacher participation in professional learning communities and professional development

rooted in classroom practice. Positive benefits have resulted from the incorporation of new aspects including the availability of coaches and outside help, the use of models and the modeling of effective practice, and making sure that opportunities for reflection and feedback are available (Darling Hammond et al. 2019).

On the other hand, the possibility for pedagogy-focused professional development is limited because the field's research breadth has been narrowed by the concentration on content. Most research on professional development that is content-focused looks at specific subjects like science, math, and English. The question of how to teach a particular subject to pupils is at the center of pedagogy, which frequently refers to the persistent idea of "pedagogical content knowledge." As a result, during professional development, teachers usually work with peers in the same subject area or grade level. Although some recent research indicates that teachers from different grades or subjects working together on discrete teaching methods can enhance teacher learning, there is no evidence in the literature of collaborative professional development involving instructors from diverse grades or disciplines (Gore et al. 2015).

The teacher-as-technician approach, which is connected to the delivery concept of educational reform, has received support from professional development. According to this, the teacher is viewed as the impartial arbiter of rules that come from "above." This model presents a picture of a teacher who has little to no influence over their students' practices. It fails to take into account the processes that educators go through as they study their profession, pick up new skills and information, and evaluate and adjust their attitudes, convictions, and methods as they deal with the demands of the curriculum and transitions. Professional development that comes from within the profession and allows for more

collaborative practices that are targeted toward specific needs is now evidently needed, and it should center around teachers. To foster a culture of learning where educators are dedicated to developing their ability to serve an ideal, moral purpose, we have seen several of leadership models throughout the years that attempt to increase teachers' capacity (Spencer et al. 2018).

Programs that prepare students for leadership roles should embrace the governance concepts outlined in the New Public Management idea and give careful thought to contextual aspects like the school's immediate neighborhood and country, which are seen as more likely to yield positive outcomes. Furthermore, there is a stark difference between the political expectation that each school be given greater authority and the limited understanding of how this new public management strategy can be implemented into effective leadership practices. It is unclear what kind of governance mix, under what circumstances, and what kinds of "leadership challenges" and "leadership consequences" result from it. The larger context of research into the effective application of leadership knowledge on the ground can be linked to the subject of context-relevant professionalization of school principals. Additionally, research in this area shows that applying the effective leadership paradigm's evidence is frequently more complicated than decision-makers might think (Mowat and McMahon 2019).

Context sensitivity is necessary for comprehensive leadership development programs, but it is insufficient on its own. Rather, the focus of leadership training and practices ought to be on the anticipated outcomes, the factors that influence the learning process for students, and the environment that promotes improved academic performance. A well-known issue arises in a novel setting: if and how theoretical understanding of

effective leadership may be translated into practical leadership techniques appropriate for the neighborhood school setting. There has been a noticeable gap for some time now between school administrators' real use of research-based leadership expertise on the ground and their acquisition of it. Of course, it is impossible to directly apply the body of information on effective leadership that is based on research to leadership techniques that are appropriate for a given situation. Studies on the use of evaluations in the Anglo-American region, which is currently a well-established field of study with a wide subject scope, corroborate these findings (Grissom et al. 2019).

Modern approaches to organizational and management theory, in particular in schools, have given new impetus and emphasis to the call for greater school autonomy as a necessary component of healthy school development and teaching and learning. Self-governance or self-control at the school appears to be crucial in this situation. This was closely tied to the conversation regarding the skills and credentials of school principals, particularly in light of the growing expectation that schools assume greater accountability for the learning results attained. Emphasizing qualification and support measures for school management personnel becomes increasingly important in empirical school management research because the tasks and responsibility's structure differs from the conventional role of school management (Heffernan 2018).

Educators in Europe and elsewhere have devised plans for the staffing, choice, preparation, further qualification, and support of school leaders, in part because of the growing body of empirical evidence supporting school leadership actions as a key element of school quality assurance and development. In order for them to effectively carry out this new and crucial function as quality development and quality assurance agents, it was

determined that they needed to do this. Such approaches entail modifying leadership activities by assuming that school administrators would acquire leadership principles in professional development courses. Additionally, it is anticipated that, at least temporarily, these new leadership initiatives will enhance teacher professionalization and enhance the quality of instruction in schools (Tran et al. 2018).

The only way to make school leaders more prepared to professionalize is to raise awareness of the need for a systemic foundation and functional determination of the altered role of school leadership. The leaders in education of the future must recognize their new duties and obligations, come to terms with them, accept them, and eventually make sense of them. They are basically acting as a flexible anchor and a trustworthy compass during this phase in a setting that is changing rapidly, which could cause a lot of discrepancies and uncertainty among other staff members. Thus, in school leadership research, a new context-oriented perspective that has, at most, been explored sporadically in the past has become increasingly relevant. Very few contemporary research endeavors have embraced the notion and elaborated on it (Hallinger 2018).

The move from teacher to successful principal requires both education and experience. As mentioned earlier, actors who make demands on what has to be done include those at the national or political level, national agencies, school owners including towns and independent school boards, as well as educators, students, parents, and the general public. It is common for individual principals to hold themselves to greater standards than they do other actors. The amount of knowledge concerning subjects related to education, curricula, organization, management, school improvement, and societal changes is immensely expanding in an environment that is becoming more and more

complex. Furthermore, the knowledge base of a principal becomes increasingly context-specific (Clarke and O'Donoghue 2017).

An online teaching practice's adoption rate by faculty members as a consequence of professional development is frequently represented numerically in the literature that is currently in publication. On the other hand, scholars frequently enumerate obstacles or lessons discovered that are unrelated to the theories currently in use for innovation adoption or execution. However, some of the research that has already been done ignores the impact that design choices had on faculty members' decisions to adopt a particular professional development program, concentrating only on the program's implementation and design. The analysis of these activities in the current research is rarely supported by theory. The body of literature addressing the intersection of theory, teacher experiences, and professional development about online teaching and learning in higher education is so lacking. Many studies of higher education teachers using online learning in particular subjects where the emphasis is on delving deeper into the complexities of that field, like agriculture, are available in the body of existing literature (Drape, 2013).

The early 21st century saw a summary of developments in professional development for cultural diversity, about the objectives and contents of professional development. Expanding teachers' knowledge of people, cultures, and languages as well as abstract concepts and theories about diversity is typically the goal of professional development that places a strong emphasis on cognitive growth. The emphasis of reflection-based professional development is on teachers reflecting on their place in society and how it connects to teaching and learning, or on teachers reflecting broadly on society. Through participation in interactive, cooperative activities, professional development that

emphasizes emotional dimensions frequently fosters cultural sensitivity and positive intergroup connections. It is suggested that professional development be viewed as a system aiming at transformation, integrating critical reflection and supporting teachers in finding pedagogical responses to the need for professional development to persistently reconnect practice to theory. This approach is to be led by teachers and supported by school leaders, rather than segmenting the aims and contents of professional development for cultural diversity, as was previously mentioned. The significance of teachers' collegial collaboration and school administrators' active engagement in creating a conducive atmosphere for professional growth is confirmed by studies that concentrate on whole-school learning for cultural diversity (Ohi et al. 2019).

Based on global experiences, teacher educators can effectively contribute to understanding and improving the educational process in their particular countries. But as classroom variability rises and the difficulty of adapting instruction to individual students grows, educators in certain nations are finding themselves forced to employ a "one-size-fits-all" method of instruction in a variety of situations. However, some educators contend that differentiating instruction is too hard to implement and shouldn't be recommended as a way to meet the various requirements of kids in the classroom. Adopting a differentiated instructional strategy in a confined environment has been confirmed by informal interactions with some teacher educators who have extensive experience teaching at Colleges of Teacher Education and Universities (Melese, 2019).

Given that they dictate the participants' experiences in the moment, teacher education processes might be the most crucial for fostering a knowledge of cooperative procedures in general and cooperative learning in particular. An identified series of acts or

occurrences occurring over time to reach a specific objective is what is referred to as a process. The Structure-Process-Outcome Theory, created by Goodwin Watson and Johnson, supports the idea that it is more important to concentrate on the method of instruction than the material being taught. The key principle of the idea is that people's actions to accomplish goals are determined by the way those goals are organized, and those actions ultimately define the situation's results. That is to say, rather than coming from the goals themselves, outcomes are the products of the actions people do to reach them (Johnson and Johnson 2017).

Providing practice lessons that foster cooperation between universities and schools is a two-way process that not only helps pre-service teachers grow but also gives faculty members and teachers a chance to stay current on the latest developments in the field. The benefits of collaboration between universities and schools in teacher preparation are seen across a wide range of disciplines. Numerous studies also indicate that pre-service teachers' professional development at universities is significantly impacted by the mentorship they receive from teachers. Furthermore, university-school collaboration within a particular program is said to boost faculty, staff, and student learning and professional development (Haigh & Mackisack, 2017).

Effective cooperative learning involves planning and facilitating student interactions. However, teachers may find it challenging to put these qualities into practice because they believe they are hard to implement. Transitioning from a classroom management position to one of group management and student promotion is another challenge that teachers may face when using cooperative learning. Other obstacles to cooperative learning could be the time and effort required to set it up, the space and time

needed to execute it in the classroom, conflicts that arise during group projects, and the evaluation of students' success. According to studies, teachers' perceptions of hurdles and difficulties are what mostly prevent them from finding the time and space to plan and execute cooperative learning. These perceptions also indicate how frequently teachers employ cooperative learning in the classroom (Buchs et al. 2017).

The critical importance of teacher professional development has been one of the main takeaways from the studies on sustainable education reform conducted over the past 20 years. The roles of pre-service education and in-service workshops in teachers' professional development were the primary foci of their professional development. But over the past few decades, the process of developing teachers' professional skills has been started during their pre-service teacher education and has continued through job-embedded, collaborative, coherent, and reflective professional activities. This prompted researcher to focus on how working environments might support instructors' engagement in successful and productive learning throughout their teaching careers. The importance of school administrators in fostering environments that are conducive to teachers' professional growth is a recurring subject in both these studies and the academic literature (Qian et al., 2017).

The idea of "digital teacher competence," which describes the abilities, perspectives, and expertise needed by teachers to assist students' learning in the modern digital environment, has also gained significant traction. The requirement that teachers possess digital competency is causing society to become more and more alarmed. Therefore, in the framework of comprehensive teacher education, it is imperative to look

for ways to integrate this understanding of digital teaching skills into workable suggestions for in-service or teacher training (Kivunja 2013).

Devices have been adopted to build the necessary digital competence that educational agents need for teaching and learning processes, in response to the growing concern over digital training. As a result, some Latin American and European nations have created draft ICT standards for use in both initial and continuing teacher education. Despite this, many nations believe that the primary goal of developing these training programs should be to reinforce any potential weaknesses that instructors may possess. There are other flaws, such as the assertion that early teacher preparation programs lack enough instruction in digital competency. Specifically, instructors' basic usage of ICT does not equate to competent professional practice (Björk,2018).

Because of the impact that technology has on professional environments and the changes it brings about for employees' performance, this review is motivated by the significance that technology has in today's society. About the practical advantages of educational technology on teachers' professional development, however, a thorough analysis has not yet been conducted. There are still certain unanswered questions, despite the fact that numerous reviews of this topic have advanced our understanding of teachers' digital competency. After receiving the appropriate training, it is therefore important to investigate further the advantages it offers for teachers' professional growth while also taking note of the educational opportunities it presents. Similarly, the educational level at which professional performance occurs becomes another important component of professional capital (Spante et al. 2018).

Secondary schools, where most teachers teach in secret, learn by teaching, and are solely in charge of their students' education, are being replaced by schools that have developed strategies to become learning organizations and strengthen their professional learning culture. In these schools, teacher collaboration is intentionally ingrained in teachers' planning, executing, evaluating, and learning about teaching. Teachers' professional learning and teamwork can be hampered or enhanced by interventions and school settings. The interventions that schools could use, however, to promote teachers' professional learning and cooperation, to create and strengthen a culture of professional learning and collaboration, and to advance their status as learning organizations, are somewhat unclear. We support the idea that schools should function as professional learning communities in order to encompass the individual, group, and collaborative facets of professional development and to collaborate toward a common goal (Thornton and Cherrington 2019).

Since special education students have long been taught in general education classrooms, a number of studies have revealed that a large number of general education teachers may not be fully aware of what is required to provide an inclusive learning environment. Professional development and teacher preparation programs can provide teachers with the knowledge and abilities to make learning opportunities available to every student. It is still difficult for the majority of pre- and in-service programs to impart knowledge in a way that gives general educators the skills they need to work well with students who have special needs in a general education classroom. In these programs, interacting with students who have special needs is frequently addressed, but teachers still appear to need assistance (Rock et al., 2016).

The areas of job satisfaction and commitment may not hold significance for student teachers. The term "job satisfaction" describes how instructors feel about the organization or school for which they work. This concept is associated with a “emotional state” that arises from a work experience at a specific institution. The absence of an appointment means that this domain holds no significance for student teachers' professional growth. It's common to interpret the domain commitment as being devoted to the teaching profession. The primary focus of this area is the dedication of educators to the school and work for the organization. The decision to pursue teacher education by student instructors is an explicit one, therefore dedication to the field and loyalty to an employer are not in question. In addition, motivation is more often linked to commitment-related traits that are thought to be significant for the professional growth of student teachers, such as engagement and willingness to teach (Hanna et al., 2019).

Special education teachers are no longer responsible for educating students with special needs. The least restrictive setting of a general education classroom has been designated as the ideal learning area following the enactment of the Individuals with Disabilities Education Improvement Act. Since teachers across all subject areas and levels are now expected to consistently engage and collaborate with children who have special needs, the educational philosophy has shifted toward inclusion. The worldwide community has also observed this drive for integrating disabled pupils into general education classrooms. Now recognized as international law, inclusive education (Ozel, et al., 2017).

Through the processes of teaching and research, universities aim to fulfill the dual purposes of knowledge generation and transmission. To give life to the process of exchanging information, universities and other academic organizations or institutions serve

as essential symbols. Research serves as a springboard for classroom instruction. Teaching excellence, community service, and scientific research are all influenced by university professors, who are the major players in universities and colleges. The position of an instructor is complex and multifaceted, as they are leaders in the learning process. Instead of being limited to helping students acquire knowledge and insight, they serve as role models and mentors on a common road in the quest for knowledge (K.L. Glasper, 2016).

This chapter explained the concept of teachers' academic optimism as teachers are the main pillar of these schools and society. Teachers play an important role in making students' future. A professional teacher should have some good qualities that attract students to follow their steps in the future. School culture is all about having strong connections between parents' teachers and students. Secondly, this chapter was about the professional development of teachers, as all teachers are not professionally developed some teachers have to work on their weaknesses.

CHAPTER 3

RESEARCH METHODOLOGY

The research methodology chapter defines the approach by which this study is carried out. This chapter summarizes the study's approach, with the following sections providing a detailed explanation of the research's progress. It includes the research design, data collection process, sample procedure such as population, sampling technique, research instruments, and data analysis of the study's data.

3.1 Research approach

The main purpose of this research was to assess teachers' Academic optimism and teachers' professional development in public sectors of secondary school teachers. The researcher adopted a quantitative research approach for this type of research. When using a quantitative research approach, data from a large group are gathered numerically. The researcher selected this approach because it is used to enumerate the problem by creating numerical data or data that can be converted into usable statistics. It uses measurable data to conclude facts and reveal different research patterns.

3.2 Research Design

Objectives of the research determine the research design of the study. Keeping in view the objective of this study. There are two main objectives of the study i.e. to assess teachers' academic optimism and to find the relationship between teachers' academic optimism and professional development of teachers. So researcher used a co relational design. A correlation research design is appropriate for this study because it allows researchers to examine relationships between variables without manipulating them.

Academic optimism and professional development practices naturally exist within school settings. A correlation research design allows researchers to study these variables as they occur in real-world educational environments. This design can help predict whether teachers with high academic optimism are more likely to engage in professional learning. It can identify trends in how trust, efficacy, and academic emphasis influence teacher growth and effectiveness. By using Pearson's correlation, researchers can assess the strength of relationships and potential influences between variables. Correlation research helps provide empirical evidence for policymakers and school administrators. If strong correlations exist, educational institutions can design targeted professional development programs to foster academic optimism.

3.3 Population

The researcher was interested in selecting all teachers of public sector secondary schools at Gojra Muzaffarabad. According to latest updates Elementary and secondary education of AJ&K 2022 the total numbers of public secondary school N=21 and total numbers of public secondary school teachers in Gojra Muzaffarabad are N=168

Table 3.1

Population of the study

Sr. no	Number of Schools	Number of Teachers
1	21	168

3.4 Sampling technique

The primary goal of sampling is to identify the respondent that the researcher wants to collect data from. In the majority of studies when the population is vast and data collection from the entire population is challenging. Consequently, the researcher used the random sample technique to collect data for the study, taking into consideration the characteristics of the significant population.

3.5 Sample

The sample was selected from public secondary schoolteachers of Gojra Muzaffarabad. According to Morgan's table if the population is between 160 to 170 the accurate sample size will be 118. The researcher took 70% of sample from population.

Table 3.2

Sample of the study

Sr.	Population	Sample size
No.		
1	168	118

3.6 Research instrument

The researcher used some adopted questionnaires as a tool for data collection. The instrument was based on the theoretical framework by (Hoy et al., 2011). Researchers found a standardized tool regarding Academic Optimism and Teachers' Professional Development. Tools were consisted of 20 and 47 total items. Moreover, the tools were consisted of two main parts. First part of the tools were demographic parts such as age, experience, and rank. The second part was consisted of 20 and 47 items for each questionnaire respectively which were to use to evaluate each dimension of by Academic Optimism and Teachers' Professional Development using five point Likert scale options ranging from 1= Strongly Disagree 2= Disagree 3= Undecided 4= Agree 5= Strongly Agree. Directions were provided at the beginning of each section and researcher also ensured respondent about their privacy and anonymity. Furthermore, the researcher had email the concerned person to grant permission for using the research tool, and researcher got the permission to use the tool in current study.

3.6.1 Demographic information

First part of each questionnaire was consisted of personal information of the respondents. It was used by the researcher to obtain the demographic information of public secondary school teachers of Gojra Muzaffarabad. Items related demographic information was based on age, experience, and rank.

3.6.2 Academic Optimism

This section was based on an academic optimism questionnaire. There were a total 20 items and each dimension had 5, 6, and 9 items. Details of the items are given in Table 3.3 below:

Table 3.3

Description of academic optimism scale

Sr. No	Dimensions	Items	Numbers of items
1	Academic Emphasis	AE1, AE2, AE3, AE4, AE5	05
2	Collective Efficacy	CE1, CE2, CE3, CE4, CE5, CE6	06
3	Trust in parents and Students	TPS1, TPS2, TPS3, TPS4, TPS5, TPS6, TPS7, TPS8, TPS9	09

Table 3.4

Description of teachers' professional development scale

Sr. No.	Dimensions	Items	Numbers of items
1	Thematic Knowledge	TK1, TK2, TK3, TK4, TK5, TK6, TK7, TK8, TK9	9
2	Learning Environment	LE1, LE2, LE3, LE4, LE5, LE6	6
3	Cooperation	C1, C2, C3, C4, C5	5
4	Educational Technology	ET1, ET2, ET3, ET4, ET5, ET6	6
5	Research Base	RB1, RB2, RB3, RB4, RB5, RB6	6
6	Educational Planning	EP1, EP2, EP3, EP4, EP5	5
7	Evaluation	E1, E2, E3, E4, E5	5
8	Development of Human Resources	DHR1,DHR2,DHR3, DHR4, DHR5	5

3.6.3 Validity of the tool

The researcher adopted the tools for the study. As these tools were standardized, it doesn't need validity.

3.6.4 Pilot testing

The researcher selected a sample of 29 students from the population consisting of Secondary School teachers for pilot testing. To gathered information, the researcher made in-personal visits to each school. Teachers were given questionnaires by the researcher, who requested them to make selections using a five-point Likert scale. The respondents received guarantees that the information they submitted would only be utilized for study. SPSS was used to examine the data. The researcher distributed 33 questionnaires and 29 were return back to researcher. The rate of return to return were 87% of questionnaires distributed.

3.6.5 Reliability of the Instrument

After pilot testing, the data that were collected through pilot testing were analyzed through SPSS version 22 to get the anticipated results and interpreted in table form in order to access the strength of the questionnaire and as well to improve the items for the final version of the questionnaire. All items were coded for this study. For this purpose, Item-total correlation, and Cronbach alpha were calculated by the research

Table 3.5

Cronbach Alpha Reliability of Academic Optimism Scale Pilot testing (No of teachers=29)

Sr. No.	Variable	Sub variables	Total items	Cronbach Alpha
1	Academic Optimism		29	.819
2		Academic emphasis		.751
3		Collective efficacy		.572
4		Trust in parents and students		.492

The above table 3.5 shows the reliability of the “Academic Optimism Scale”. Overall Cronbach Alpha was .819. Despite the major dimensions of reliability of the “Academic Optimism Scale” “Academic Emphasis” “Collective Efficacy” and “Trust in parents and students” were .751, .572, .492 respectively

Table 3.6

Item-total correlation of Academic Optimism scale pilot testing (No of teachers=29)

Code	R	Code	R
AE1	.703**	CE6	.404*
AE2	.646**	TPS1	.714**
AE3	.595**	TPS2	.643**
AE4	.525**	TPS3	.232
AE5	.612**	TPS4	.271
CE1	.207	TPS5	.473*
CE2	.453*	TPS6	.437*
CE3	.606**	TPS7	.530**
CE4	.747**	TPS8	.191
CE5	.638**	TPS9	.071

The above table 3.6 shows the Item-total correlation of the Academic Optimism scale. The highest Item-total correlation was of item No. CE4 (.747) and the lowest Item-total correlation was of item No. TPS9 (.017).

Table 3.7

Intersection correlation of Academic Optimism Scale pilot testing (No of teachers=29)

	Academic Emphasis	Collective Efficacy	Trust in Parents and Students	Sum
Academic Emphasis	1			
Collective Efficacy	.340*	1		
Trust in Parents and Students	.578**	.270	1	
Academic Optimism	.865**	.621**	.865**	1

*Correlation is significant at the 0.01 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

The above table 3.7 shows the intersection correlation of the Academic Optimism Scale. The highest intersection correlation was found between Academic Emphasis and Academic Optimism Scale (.865**) whereas the lowest intersection correlation was found between Collective Efficacy and Academic Optimism Scale (.270).

Table 3.8

Cronbach Alpha Reliability of Teachers Professional Development Scale Pilot testing

(No of teachers=29).

Sr. No.	Main variable	Sub variables	Cronbach Alpha
1	Teachers' Professional development		.751
2		Thematic knowledge	.627
3		Learning environment	.452
4		Cooperation	.418
5		Educational Technology	.440
6		Research Base	.463
7		Educational Planning	.543
8		Evaluation	.461
9		Development of Human Resources	.388

The above table 3.8 shows the reliability of the “Teachers’ Professional Development Scale”. Overall Cronbach Alpha was .751. while major dimensions’ reliability of “Teachers’ Professional Development Scale” “Thematic Knowledge” “Learning Environment” “Cooperation” Educational Technology” “Research Base” “Educational

Planning” “Evaluation” “Development of Human Resources” were .627, .452, .418, .440, .463, .543, .461, .388 respectively.

Table 3.9

Item-total correlation of Teachers' Professional Development scale pilot testing (No of teachers=29)

Code	R	Code	R
TK1	.171	ET5	.498**
TK2	.327	ET6	.747**
TK3	.359*	RB1	.304
TK4	.418*	RB2	.383*
TK5	.463**	RB3	.155
TK6	.408*	RB4	.604**
TK7	.271	RB5	.255
TK8	.420*	RB6	.425*
TK9	.301*	EP1	.239
LE1	.264	EP2	.409*
LE2	.487**	EP3	.225
LE3	.348*	EP4	.572**
LE4	.378*	EP5	.252
LE5	.431*	E1	.260
LE6	.339*	E2	.348*
C1	.367*	E3	.515**
C2	.266	E4	.459*
C3	.287	E5	.412*
C4	.432**	DHR1	.289
C5	.428*	DHR2	.312
ET1	.193	DHR3	.412*
ET2	.144	DHR4	.121
ET3	.015	DHR5	.345
ET4	.498**		

The above table 3.9 showed the Item-total correlation of Teachers' Professional Development scale. The highest Item-total correlation was of item No. ET6 (.747) and the lowest Item-total correlation was of item No. ET3 (.015).

Table 3.10

Intersection correlation of Teachers' Professional Development Scale pilot testing (No of teachers=29

	Thematic	Knowledge Learning	Environment	Cooperation	Educational	Technology	Research Base	Educational	Planning	Evaluation	Development of	Human	Sum
Thematic	1												
Knowledge		1											
Learning	.298		1										
Environment				1									
Cooperation	.300	.312			1								
Educational	.419	.344	.450*			1							
Technology							1						
Research	.136	.387*	.424*	.262				1					
Base									1				
Educational	.282	.337	.153	.122	.100					1			

Planning									
Evaluation	.336	.299	.457*	.641**	.337	.205	1		
Development of Human Resources	.397*	.331	.438**	.216	.428**	.025	.348	1	
Teachers' Professional Development	.507**	.673**	.610**	.652**	.618**	.487**	.680**	.206	1

*Correlation is significant at the 0.01 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed)

The above table 3.10 shows the intersection correlation of the Teachers' Professional Development Scale. The highest intersection correlation was found between Evaluation and Teachers' Professional Development Scale (.680**) while the lowest intersection correlation was found between Educational Planning and Teachers' Professional Development Scale (.025).

3.7 Data collection

Data collection is an important part of the research. The researcher collected data from public secondary school teachers of Muzaffarabad. The researcher personally

visited the schools and gathered data via questionnaires from teachers. Authorities allowed the researcher to gather data from teachers.

3.8 Data analysis

The researcher personally visited the institutes and gathered data through questionnaires. After that the researcher used statistical packages of social science (SPSS) to analyze the data. Researcher used mean and Pearson correlation to examine the data. Researcher also used the thematic analysis to analyze the qualitative portion of the study.

Table 3.11

Data analysis statistical test

Sr. no.	Objectives	Hypothesis	Statistical test
1.	To assess the ways to improve academic optimism of teachers for professional development of teachers at secondary school level		Mean
2.	To find the relationship between academic optimism and professional development of teachers at secondary school level.	H ₀₁ : There is no significant relationship between academic optimism and professional development of teachers at secondary level.	Pearson correlation
		H _{01a} : There is no significant relationship between academic emphasis and professional development of teachers at secondary level.	Pearson correlation
		H _{01b} : There is no significant relationship between collective efficacy and professional	Pearson correlation

development of teachers at
secondary level

H_{01c}: There is no Pearson
significant relationship correlation
between trust in parents and
students and professional
development of teachers at
secondary level

3.9 Research Ethics

The researcher keeps research ethics in view while doing research. Researchers must know the ethical considerations for data collection. The researcher should have patience while interacting with the participants of the research. For collecting data researcher issued a reference letter from the National University of Modern Languages. The researcher makes sure participants that information they shared only used for research purpose. Participants have free hands to share information researcher don't take information forcefully.

3.10 Delimitations

Following were the delimitations of the study;

1. To Gojra Muzaffarabad
2. Public secondary schools
3. Only male teachers

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

In this chapter, the researcher goes into extensive detail about the interpretation and analysis of the data. The collected data was presented in tabular form in this chapter. Different variables were assessed statistically. A detailed explanation of the data interpretation was given. There are three sections to this chapter. The first section consisted of demographic information of the variables. The second part consisted of an analysis of data according to the objectives of the study to assess teachers' academic optimism at the secondary school level and third section consisted of to find the relationship between teachers' academic optimism and professional development at secondary school level.

Section I

Demographic information

Table 4.1

Gender-wise distribution of the population

Age	Frequency	Percentage
25-30	28	26%
31-35	28	26%
36-40	31	29%
41-Above	20	19%

The above table 4.1 indicated age of the current study was 25-30(26%), 31-35(26%), 36-40(31%) and 41-above (19%) of teachers teaching in public secondary schools of Gojra Muzaffarabad.

Experience wise distribution of the population

Experience	Frequency	Percentage
1-3	42	39%
4-6	39	36%
7-9	19	18%
10-Onward	7	7%

The above table 4.2 indicated experience of present study was 1-3(39%), 4-6(36%), 7-9(18%) and 10-onward (7%) of teachers teaching in public secondary schools of Gojra Muzaffarabad.

Table 4.3

Ranks wise distribution of population

Rank	Frequency	Percentage
16	66	62%
17	16	15%
18	19	18%
19	6	5%

The above table 4.3 indicated rank of present study was 16(62%), 17(15%), 18(18%) and 19(5%) of teachers teaching in public secondary schools of Gojra Muzaffarabad.

Section II

Assess Teachers' Academic Optimism

Objective 1: To assess the ways to improve academic optimism of teachers for professional development of teachers at secondary school level

Table 4.4

Level of teachers' academic optimism between secondary school teachers Muzaffarabad

Variables	N	Mean	Remarks
Academic Emphasis	107	3.70	Agree
Collective Efficacy	107	3.83	Agree
Trust in parents and students	107	3.72	Agree
Overall Teachers' Academic Optimism	107	3.71	Agree

Table 4.4 indicated the mean score of Teachers' Academic Optimism. It was investigated that Teachers' Academic Optimism on different averages. Total respondents were 107 whereas mean score of Teachers' Academic Optimism tool was 3.71, Academic Emphasis was 3.70, Collective Efficacy was 3.83 and Trust in parents and students was 3.72. The highest mean score was found of Collective Efficacy 3.83 and lowest mean score was found of Academic Emphasis 3.70.

Table 4.5

*Level of teachers' professional development between secondary school teachers
Muzaffarabad*

Variables	N	Mean	Remarks
Thematic Knowledge	107	3.65	Agree
Learning Environment	107	3.50	Agree
Cooperation	107	3.88	Agree
Educational Technology	107	3.74	Agree
Research Base	107	3.68	Agree
Educational Planning	107	3.64	Agree
Evaluation	107	3.54	Agree
Development of Human Resources	107	3.56	Agree
Overall Teachers' Professional Development	107	3.63	Agree

Table 4.5 indicated the mean score of Teachers' Professional Development. It was investigated that Teachers' Professional Development on different averages. Total respondents were 107 whereas mean score of Teachers' Professional Development tool

was 3.63, Thematic Knowledge 3.65, Learning Environment 3.50, Cooperation 3.88, Educational Technology 3.74, Research Base 3.68, Educational Planning 3.64, Evaluation 3.54 and Development of Human Resources 3.56. The highest mean score was found of Cooperation 3.88 and lowest mean score was found of Learning Environment 3.50.

Section III

Relationship between Academic Optimism and teachers' Professional Development

Objective 2: To find the relationship between academic optimism and professional development of teachers at secondary school

Table 4.6

Relationship between Academic optimism and teachers' professional development

Variables	Relationship (r)	Sig (2-tailed)
Academic Optimism and Professional Development of Teachers	.561**	,000

p < 0.05, **p < 0.01, *p < 0.001*

The above table 4.6 indicates the Pearson correlation coefficient (r) among Academic Optimism and Teachers' Professional Development in public secondary school teachers. The table indicated correlation between the two variables is $r = .561^{**}$ and a significant value of $p = .000$. The value of r and p indicated that there was a positive significant relationship between academic optimism and teachers' professional development of public secondary school level teachers. So the null hypothesis was rejected. It was found that teachers' academic optimism increased with the increase of teachers' professional development.

Table 4.7

Relationship between professional development and Academic Emphasis

Variables	Relationship (r)	Sig (2-tailed)
Academic Optimism and Academic Emphasis	.743**	.000

p < 0.05, **p < 0.01, *p < 0.001*

The above table 4.7 indicates the Pearson correlation coefficient (r) among professional development and Academic Emphasis of public secondary school teachers. The table indicated correlation between the two variables is $r = .743^{**}$ and a significant value of $p = .000$. The value of r and p indicated that there was a positive significant relationship between professional development and academic emphasis of public secondary school level teachers. So the null hypothesis was rejected. It was found that academic emphasis increased with the increase of teachers' academic optimism.

Table 4.8

Relationship between professional development and collective efficacy

Variables	Relationship (r)	Sig (2-tailed)
Professional development and Collective Efficacy	.799**	.000

p < 0.05, **p < 0.01, *p < 0.001*

The above table 4.8 indicated that Pearson correlation coefficient (r) among professional development and Collective Efficacy of public secondary school teachers. The table indicated correlation among two variables is $r = .799^{**}$ and significant value $p = .000$. The value of r and p indicated that there was positive significant relationship among professional development and collective efficacy of public secondary school level teachers. So the null hypothesis was rejected. It was found that collective efficacy increased with the increased of teachers' academic optimism.

Table 4.9

Relationship between professional development and trust in parents and students

Variables	Relationship (r)	Sig (2-tailed)
Professional development and Trust in parents and students	.798**	.000

p < 0.05, **p < 0.01, *p < 0.001*

The above table 4.9 indicated that Pearson correlation coefficient (r) among professional development and Trust in parents and students of public secondary school teachers. The table indicated correlation among two variables is $r = .798^{**}$ and significant value $p = .000$. The value of r and p indicated that there was positive significant relationship among professional development and trust in parents and students of public secondary school level teachers. So the null hypothesis was rejected. It was found that trust in parents and students increased with the increased of teachers' academic optimism.

Section IV

Thematic Analysis

Objective 3: To explore the implications of teachers academic optimism and their professional development at secondary school level

Q1: How do you think academic optimism affect professional development?

Table 4.10

Themes

Main theme	Sub themes
Academic achievement	Students learning
	Learning environment
	Focus on students achievements
	Students success
	Lifelong learning

According to some teachers, improving student learning and academic performance requires a friendly and positive learning atmosphere. It creates an atmosphere where students are inspired, motivated, and feel appreciated for taking an active role in their education. Teachers and students establish high standards and provide the tools and assistance needed to succeed. A significant emphasis on academic performance means that students are not just fulfilling grade-level expectations but are also being pushed to realize their full potential through ongoing feedback and specific learning opportunities.

Q2: How does relationship with parents and students affected professional development?

Table 4.11
Themes

Main theme	Sub themes
Teamwork	Improvement in teaching strategies Adapting to Diverse Learners Effective learning Collaboration

According to some teachers, their professional development has been greatly influenced by the relationships that they have developed with students and parents over the past years. By calming open communication and trust with students, they have been able to modify their teaching strategies to better meet their unique learning needs, which have improved academic performance and engagement. Regular feedback, both formal and informal, has further enhanced student-centered approach by enabling them to reflect and improve their methods over time. The process of constant adaptation and self-reflection has made them more adaptable, responsive, and sympathetic in my instruction, ensuring that every student gets the support they need for their educational journey. Teacher's relationship with parents has been equally significant, as it has reaffirmed the value of teamwork in education.

Q3: In what ways of understanding of educational technology has contributed in professional development?

Table 4.12

Themes

Main theme	Sub themes
Educational technology	Multimedia resources Technology-enhanced lessons Positive reinforcement Assessments and personalized feedback

According to some teachers, teaching style has greatly benefited from the incorporation of technology-enhanced lessons and multimedia materials, which have helped students in future. Interactive whiteboards, films, and animations are some of the tools they have used to make dynamic, attractive classes that provide somewhere to stay a variety of learning preferences. These resources not only simplify difficult ideas but also encourage students' awareness and active engagement. Platforms like Google Classroom, which are enabled by technology, enable them to present material in creative ways that make learning environment more attractive. Furthermore, tools like Microsoft Forms and Quizzes give them real-time insights into students' performance, allowing them to identify their areas of strength and improvement.

Objective 4: To explore the prospects of teachers academic optimism and their professional development at secondary school level

Q1. What potential opportunities does academic optimism create for enhancing teachers' professional development?

Table 4.13
Themes

Main theme	Sub themes
Positive mindset	Positive school culture
	Innovative teaching practices
	Motivation
	Continuous learning

Teachers suggested that, academic optimism encourages teacher to take on new challenges and broaden their professional experience, which is essential for promoting leadership chances and career advancement. Teachers are more inclined to look for leadership positions within their organizations, such as trainers, coordinators, or mentors, when they think positively. In addition, this optimism fosters a positive school climate where educators are encouraged to develop and feel appreciated.

Q2. How can fostering academic optimism among secondary school teachers lead to long-term career growth and improved teaching practices?

Table 4.14
Themes

Main theme	Sub themes
Improved teaching practices	Mindset growth
	Reflected teaching
	Student centered approach
	Long term career growth

According to some teachers, Fostering academic optimism among secondary school teachers can lead to long-term career growth and improved teaching practices by

instilling a strong belief in their abilities, enhancing motivation, and promoting a culture of continuous learning, they develop a growth mindset that encourages them to seek professional development opportunities, embrace challenges, and stay updated with modern educational trends.

Chapter 5

Summary, findings, discussion, Conclusion, recommendations, and limitations

5.1 Summary

The purpose of the current study was to find out the relationship between teachers' academic optimism and teachers' professional development at secondary school level. This study consisted on two variables and 11 sub-variables. The main objectives of the study were: To find the relationship between academic optimism and the professional development of teachers at secondary school level. The main null hypothesis was: There is no significant relationship between academic optimism and the professional development of teachers at secondary school level.

The theoretical framework of the present study was based on teachers' academic optimism which was proposed by Hoy (2011). Hoy model consisted on three sub elements i.e. academic emphasis, collective efficacy and trust in parents and students.

The current study was done through quantitative research approach and correlation research design. The population of this study was public secondary schools of Gojra Muzaffarabad. Data were gathered from 21 secondary schools of Gojra Muzaffarabad. Simple random sampling technique was used. According to Morgan table, the sample of current study was 118 teachers. Researcher adopted two questionnaires as a tool for data collection. Tools were consisted of 3 and 8 variables and 20 and 47 items respectively. Tools were divided into two components such as demographic information and questionnaires related items information.

As the researcher adopted the both questionnaires there was no need of validity. Researcher distributed 30 questionnaires to teachers in which 29 were returned. Researcher put the collected data in SPSS to find the reliability of tools. Reliability of tools was (.819) and (.751). For final data the researcher personally visited each school to gathered data. The researcher distributed 118 questionnaires to teachers then only 107 questionnaires returned back. The researcher entered the data into SPSS for data analysis then mean and Pearson's correlation tests were used.

5.2 Findings

The findings of study were as follows;

Objective No. 1: To assess the ways to improve academic optimism of teachers for professional development of teachers at secondary school level

It was found that the overall mean score for teachers' academic optimism in public secondary schools' level 3.71 indicating that teachers at the secondary school level were agreed with academic optimism (Table 4.4).

Table 4.4 indicated that the mean score of academic emphasis. The mean score was found 3.70. It indicated that majority of teachers were agreed with academic emphasis.

Table 4.4 indicated that the mean score of collective efficacy. The mean score was found 3.83. It indicated that majority of teachers were agreed with collective efficacy.

Table 4.4 indicated that the mean score of trust in parents and students. The mean score was found 3.72. It indicated that majority of teachers were agreed with trust in parents and students.

It was found that the overall mean score for teachers' professional development in public secondary schools' level 3.63 indicated that teachers at secondary school level were agreed with professional development (Table 4.5).

Table 4.5 indicates that the mean score of thematic knowledge. The mean score was found 3.65. It indicated that majority of teachers were agreed with thematic knowledge.

Table 4.5 indicates that the mean score of learning environment. The mean score was found 3.50. It indicated that majority of teachers were agreed with learning environment.

Table 4.5 indicated that the mean score of cooperation. The mean score was found 3.88. It indicated that majority of teachers were agreed with cooperation.

Table 4.5 indicated that the mean score of educational technology. The mean score was found 3.74. It indicated that majority of teachers were agreed with educational technology.

Table 4.5 indicated that the mean score of research base. The mean score was found 3.68. It indicated that majority of teachers were agreed with research base.

Table 4.5 indicated that the mean score of educational planning. The mean score was found 3.64. It indicated that majority of teachers were agreed with educational planning.

Table 4.5 indicated that the mean score of evaluation. The mean score was found 3.54. It indicated that majority of teachers were agreed with evaluation.

Table 4.5 indicated that the mean score of development of human resources. The mean score was found 3.56. It indicated that majority of teachers were agreed with development of human resources.

Objective No. 2: To find the relationship between academic optimism and professional development of teachers at secondary school.

The above table 4.6 indicates the relationship between academic optimism and teachers' professional development. It was found that $r=.561^{**}$ indicated that there was a positive and significant correlation between teachers' academic optimism and teachers' professional development. Academic Optimism and Professional Development of teachers have shown a positive and significant correlation. Hence, the null hypothesis was rejected.

The above table 4.7 indicates the relationship between Professional Development and academic emphasis. It was found that $r=.743^{**}$ indicated that there was a positive and significant correlation between Professional Development and academic emphasis. Professional Development and academic emphasis have shown a positive and significant correlation. Hence, the null hypothesis was rejected.

The above table 4.8 indicates the relationship between Professional Development and collective efficacy. It was found that $r=.799^{**}$ indicated that there was a positive and significant correlation between Professional Development and collective efficacy. Professional Development and collective efficacy have shown a positive and significant correlation. Hence, the null hypothesis was rejected.

The above table 4.9 indicates the relationship between Professional Development and trust in parents and students. It was found that $r=.798^{**}$ indicated that there was a positive and

significant correlation between Professional Development and trust in parents and students. Professional Development and trust in parents and students have shown a positive and significant correlation. Hence, the null hypothesis was rejected.

So there found a positive and significant correlation between teachers academic optimism and teachers professional development.

Objective 3: To explore the implications of teachers academic optimism and their professional development at secondary school level

The above table 4.10 indicates that students learning, learning environment, focus on students achievements, student success and lifelong learning can be applied for teachers' academic optimism and their professional development.

The above table 4.11 indicates that improvement in teaching strategies, adapting to diverse learning, effective learning and collaboration can be applied for teachers' academic optimism and their professional development.

The above table 4.12 indicates that multimedia resources, technology enhanced lessons, positive reinforcement and assessment and personalized feedback can be applied for teachers' academic optimism and their professional development.

Objective 4: To explore the prospects of teachers academic optimism and their professional development at secondary school level

The above table 4.13 indicates that positive school culture, innovative teaching practices, motivation and continuous learning can outlook for teachers' academic optimism and their professional development.

The above table 4.14 indicates that growth mindset, reflected teaching, student centered approach and long-term career growth can outlook for teachers' academic optimism and their professional development.

5.3 Discussion

The current study aimed to find the relationship between teachers' academic optimism and teachers' professional development at the secondary school level with two objectives. The 1st objective of the research was to assess the ways to improve the academic optimism of teachers for professional development of teachers at the secondary school level. It was found that teachers' academic optimism and teachers' professional development practiced on various averages. The mean value of the collective efficacy variable was high as compared to other variables. Similarly, the mean value of the cooperation variable was high as compared to other variables. It indicated that collective efficacy variable practicing more in teachers' academic optimism and cooperation variable practicing more in teachers' professional development.

According to Wang & Guan (2020), academic optimism may improve the self-efficacy, confidence, building connections in the classroom, adaptability, well-being, participation, and academic performance/success of both teachers and students. Passionate teachers are concerned with the growth, learning, and performance of their students. They show strong interpersonal communication skills and continuously strive for excellence.

The 2nd objective of the study was to find the relationship between academic optimism and professional development of teachers at secondary school. It was found that there was significant relationship between teachers' academic optimism and professional development of teachers. It was found that there was significant relationship between

collective efficacy, academic emphasis and trust in parents and students and teachers' academic optimism.

According to Scott et al., (2023) was stated that academic optimism has direct positive relation with teachers' professional development. According to Liu et al., (2016) indicated that academic optimism has significant relation with teachers' professional development. According to Vetriveilmany & Ismail (2021) a relationship was found between academic optimism elements and teacher commitment, and the findings showed that academic optimism and teacher commitment factors are strongly positively associated. According to Kurt (2009) it was indicated that there is a positive and significant relationship between teachers' academic optimism and collective self-efficacy. According to Bümen (2009) professional development programs positively influence teachers' self-efficacy perceptions. School administrators have the ability to promote teachers' involvement with professional development activities and make sure that performance is valued in the school environment. According to Gray & Mitchell (2021) it was found that enabling school structure positively correlated with academic emphasis. According to Hoy (2012) it was indicated that teacher academic optimism and academic emphasis can be enhanced by creating a positive school climate that prioritizes academic accomplishment. According to Gray & Mitchell (2021) it was found that enabling school structure positively correlated with trust in parents and students.

The 3rd objective of the study was to explore the implications of teachers' academic optimism and their professional development at secondary school level. It was found that academic achievement, teamwork and educational technology can be applied for teachers' academic optimism and their professional development.

According to Torabi (2022) demonstrated that teachers who regularly engage in reflective practices develop a stronger sense of academic optimism, which in turn leads to higher levels of work engagement. This cyclical relationship suggests that fostering reflective teaching practices can enhance teachers' beliefs in their professional capabilities, thereby contributing to their long-term career growth and improved instructional methods. The 4th objective of the study was to explore the prospects of teachers' academic optimism and their professional development at secondary school level. It was found that positive mindset and improved teaching practices can outlook for teachers' academic optimism and their professional development.

According to Hoy, Tarter, and Hoy (2006) introduced the concept of academic optimism, highlighting that teachers' beliefs in their capabilities, trust in students and parents, and emphasis on academic achievement collectively contribute to improved student outcomes and teaching practices. This positive outlook encourages educators to engage in continuous learning and reflective practices, leading to professional growth.

5.4 Conclusions

Outcome of objective 1st was concluded that all variables were practicing on various mean score. The highest mean value was of collective efficacy as compare to other variables such as academic emphasis and trust in parents and students. Similarly, the highest mean value was of cooperation as compared to other variables such as thematic knowledge, learning environment, educational technology, research base, educational planning, evaluation and development of human resources. 2nd objective was to find the relationship between academic optimism and professional development of teachers at secondary school level. It was concluded that there was a positive significant relationship

between academic optimism and professional development of teachers at secondary school level. Similarly, further it was concluded that there was a positive significant relationship between Professional Development and academic emphasis at secondary school level. It was also concluded that there was a positive significant correlation between Professional Development and collective efficacy at secondary school level. Furthermore, it was also concluded that there was a positive significant relationship between Professional Development and trust in parents and students at secondary school level. It was concluded that improve student learning and academic performance requires a friendly and positive learning environment. It creates an environment where students are inspired, motivated, and feel appreciated for taking an active role in their education. Additionally, it was concluded that potential opportunities to improve academic optimism such as positive mindset, positive school culture, innovative teaching practices, and motivation improve teacher professional development.

5.5 Recommendations

1. It was recommended that schools administration may arrange intra-schools seminars where teachers discuss how to encourage students to do well, how challenging tasks may be perform and how to improve academic achievements of the students.
2. It was recommended that the school may introduced workshops and hands-on activities where teachers discuss how to increase student's critical thinking,

creative and collaborative skills and applied theoretical knowledge into practical knowledge.

3. It was recommended that school heads may introduced debates where they discuss teacher retention, individual differences of students, relationship between students and teachers, how to create a conducive learning environment, the role of family in school, and how teacher can spend more time on research and investigation.

5.6 Future Research Recommendations

1. It is recommended that in future research data can be gathered through a qualitative approach
2. It is recommended that future research be done by comparison between public and private sector teachers
3. It is recommended that future research be done to find the relationship between students and teachers
4. It is recommended that future research be done to find the comparison between male and female teachers

5.7 Limitations of study

1. Due to limited time the researcher only gathered data from public secondary schools
2. Due to limited time the researcher gathered data from only male secondary school teachers
3. Due to limited time researcher used close-ended questions

Table

Alignment of objectives, findings, conclusion, and recommendation

Objectives	Hypotheses	Findings	Conclusions	Recommendations
To assess the ways to improve the academic optimism of teachers for professional development of teachers at secondary school level		It was found that the overall mean score for teachers' academic optimism at the public secondary school level 3.71 indicating that teachers at secondary school level were agreed with academic optimism. It was found that the overall mean score for teachers' professional development at the public secondary school level 3.63 indicating that teachers at secondary school level were agreed with professional development.	It was concluded that all variables were practicing on various averages. The highest mean value was of collective efficacy as compare to other variables such as academic emphasis and trust in parents and students. Similarly, the highest mean value was of cooperation as compared to other variables such as thematic knowledge, learning environment, educational technology, research base, educational planning, evaluation and development	It is recommended that school administrations may arrange intra-school seminars where teachers discuss how to encourage students to do well, how challenging tasks may be performed, and how to improve the academic achievements of the students.

			of human resources.	
To find the relationship between academic optimism and professional development of teachers at secondary school level.	There is no significant relationship between academic optimism and professional development of teachers at secondary level.	There was a significant relationship between academic optimism and teachers' professional development. It was found that $r=.561^{**}$ indicated that there was a positive and significant correlation between teachers' academic optimism and teachers' professional development.	It was concluded that there was a significant relationship between academic optimism and professional development of teachers at secondary school level	It was recommended that school heads may introduce debates where they discuss teacher retention, individual differences of students, relationships between students and teachers, how to create a conducive learning environment, the role of family in school, and how teacher can spend more time on research and investigation.
	There is no significant relationship between academic optimism and academic emphasis of teachers at the secondary level.	There was a significant relationship between academic optimism and academic emphasis. It was found that $r=.743^{**}$ indicated that there was a positive and significant correlation	It was concluded that there was a positive significant relationship between academic optimism and academic emphasis at secondary school level.	

	between academic optimism and academic emphasis.	
There is no significant relationship between academic optimism and collective efficacy of teachers at secondary level.	There was a significant relationship between academic optimism and collective efficacy. It was found that $r=.799^{**}$ indicated that there was a positive and significant correlation between academic optimism and collective efficacy.	It was concluded that there was a positive significant relationship between academic optimism and collective efficacy at secondary school level
There is no significant relationship between academic optimism and trust in parents of teachers at the secondary level.	There was a significant relationship between academic optimism and trust in parents and students. It was found that $r=.798^{**}$ indicated that there was a positive and significant correlation	It was also concluded that there was a positive significant relationship between academic optimism and trust in parents and students at secondary school level.

between
academic
optimism and
trust in parents
and students.

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APPENDIXES

Appendix A

Theoretical framework

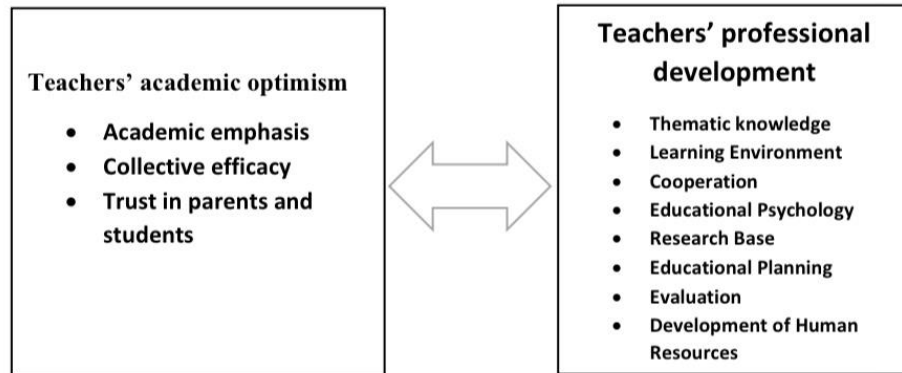


Fig 1(Theory of Academic optimism and student's achievement by Hoy, 2011)F

Appendix B

Topic approval

 NATIONAL UNIVERSITY OF MODERN LANGUAGES
FACULTY OF SOCIAL SCIENCES
DEPARTMENT OF EDUCATIONAL SCIENCES

ML.1-4/2023/Edu/634
To: Usama Altaf (42 MPhil/Edu/S22)
Dated: 15th February 2024

Subject: **APPROVAL OF MPhil THESIS TITLE AND SUPERVISOR**

1. Reference to Letter No, ML.1-4/2023-Edu/22 dated 14-02-2024, the Competent Authority has approved the title/theme/Practical/Theoretical Implication and supervisor in 17th BASR meeting dtd 30th January 2024 on the recommendations of Faculty Board of Studies vide its meeting held on 23rd November 2023.

a. **Supervisor's Name & Designation**
Dr Jameela Ashraf (Supervisor)
Assistant Professor
Department of Educational Sciences, NUML, Islamabad.

b. **Thesis Title**
Teachers' Academic optimism: Prospects and Implications for Professional Development at Secondary School Level

c. **Theme:** Professional Development of Teachers

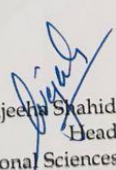
d. **Practical Application:** Pedagogical Implications

2. You may carry out research on the given topic under the guidance of your supervisor and submit the thesis for further evaluation within the stipulated time by 30th December 2024 for further processing as per NUML MPhil Timeline. (Timeline attached)

3. As per policy of NUML, all MPhil/PhD thesis are to be run on Turnitin by QEC, NUML before being sent for evaluation. The university shall not take any responsibility for high similarity resulting due to thesis run from own/other sources.

4. Thesis is to be prepared strictly on NUML's format which can be taken from MPhil/PhD Coordinator.


Distribution:
Mr. Usama Altaf (MPhil Scholar)
Dr. Jameela Ashraf (Thesis Supervisor)


Dr. Wajeeha Shahid
Head
Department of Educational Sciences

Appendix C

Data collection reference letter



DEPARTMENT OF EDUCATIONAL SCIENCES
FACULTY OF SOCIAL SCIENCES
National University of Modern Languages
Sector H-9, Islamabad
Tel.No: 051-9265100 Ext: 2090

Dated: 15-02-2024

MLL-1-3/2023-ES/631

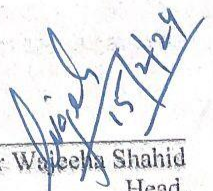
WHOM SO EVER IT MAY CONCERN

Mr. Usama Iltaf Student of MPhil Education Department of Educational Sciences
National University of Modern Languages Islamabad thesis Title "Teachers' Academic
optimism: Prospects and Implications for Professional Development at Secondary School
Level" under supervision of Dr Jameela Ashraf (Assistant Professor) Department of Educational
Sciences.

He may please be allowed to visit your Institution to obtain the required information for
his Research Work:

This information shall not be divulged to any unauthorized person or agency. It shall be
kept confidential.

 15/02/24
Supervisor (Dr Jameela Ashraf)

 15/2/24
Dr Waqeeha Shahid
Head,
Department of Educational Sciences

Appendix D

Research instrument

Instrument A

Demographic information

1. Age (Years):

1. 25-30	2. 31-35	3. 36-40	4. 41-above
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2. Experience

1. 1-3	2. 4-6	3. 7-9	4. 10-above
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3. Ranks

1. 16	2. 17	3. 18	4. 19
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Instruction: Please provide all the demographic information and answer all the questions as best you can on the scale from 1 to 5, with 1 being Strongly Disagree, 2 Disagree, 3 Neutral, 4 Agree and 5 Strongly Agree.

Sr · N o	Codes	Statements	SD	D	N	A	SA
Academic Emphasis The level at which teachers place importance on meeting the educational goals							
1	AE1	I encourage all students in this class to perform well.					
2	AE2	I give all students in this class challenging exercises.					
3	AE3	I set high, but attainable goals for all students in this class.					
4	AE4	I believe in the potential of every student in this class.					
5	AE5	I emphasize the importance of academic achievement to all students in this class.					
Collective Efficacy The shared perception of teachers in a school that have positive effect on students achievement							

6	CE1	Teachers in this school give up easily if a student does not want to learn.					
7	CE2	Teachers in this school can also achieve good results with students with individual learning needs.					
8	CE3	Teachers in this school can also achieve good results with students with a difficult home situation.					
9	CE4	Teachers in this school are confident they are able to motivate their students.					
10	CE5	Teachers in this school believe that every student can learn.					
11	CE6	Teachers in this school have the necessary skills to lead students to good performance					
Trust in Parents and Students							
Willingness of both parents and students confidence that both groups are relied upon each other							
12	TPS1	These students are sincere in their relationship with teachers.					
13	TPS2	I trust these students.					
14	TPS3	I have a good relationship with these students					
15	TPS4	I dare to be vulnerable towards these students.					
16	TPS5	I believe what these students' parents tell me.					
17	TPS6	I can count on the support of these students' parents.					
18	TPS7	These students' parents are trustworthy.					
19	TPS8	I have a good rapport with these students' parents.					
20	TPS9	I dare to be vulnerable towards these students' parents.					

Instrument B

Demographic variable

4. Age (Years):

5. 25-30	6. 31-35	7. 36-40	8. 41-above
----------	----------	----------	-------------

5. Experience

5. 1-3	6. 4-6	7. 7-9	8. 10-above
--------	--------	--------	-------------

6. Ranks

5. 16	6. 17	7. 18	8. 19-above
-------	-------	-------	-------------

Instruction: Please provide all the demographic information and answer all the questions as best you can on the scale from 1 to 5, with 1 being Strongly Disagree, 2 Disagree, 3 Neutral, 4 Agree and 5 Strongly Agree.

Sr. No.	Codes	Statements	SD	D	N	A	SA
Thematic Knowledge							
1	TK1	The teacher introduces applied knowledge to student by dominating and understanding the subject.					
2	TK2	The teacher creates enthusiasm in learners about the subjects that teaches them and relates them to everyday life of students.					
3	TK3	The teacher, increases students' skills such as critical and creative thinking in the teaching process					
4	TK4	The teacher introduces specialized knowledge to students to enable students for answering ambiguities and solving problems					
5	TK5	To make discussion more applicable, the teacher tries to evaluate teaching material continually					
6	TK6	The teacher's educational designing is in a way that makes knowledge and information meaningful for students					
7	TK7	The teacher relates learning with primary knowledge, and families' experiences					

8	TK8	The teacher provides patterns for student to teach skills, concepts and thinking process					
9	TK9	The teacher, use learning and educational strategies that are suitable for student learning					
Learning Environment							
10	LE1	The teacher knows that creating a suitable class environment is effective with students learning					
11	LE2	To manage the class, the teacher uses principles and strategies that encourage positive cooperation and goal oriented education.					
12	LE3	The teacher is obliged to benefit them in teaching students effectively					
13	LE4	The teacher encourages students to cooperate with each other					
14	LE5	The teacher creates a positive and healthy atmosphere in the classroom					
15	LE6	The teacher updates the student skills and attitude by awareness about knowledge, skills and attitude.					
Cooperation							
16	C1	To update student learning, schools cooperate with teachers					
17	C2	Knowing the role of family, the teacher makes continual relation with parents					
18	C3	The teacher asks parents, supervisors and family members to accept the role of a private teacher at home					
19	C4	To enrich student learning and enforcing learning environment, the teacher uses parents and family experience					
20	C5	The teacher consults with his or her colleague about issues related to school.					
Educational Technology							
21	ET1	To teach better, the teacher use appropriate teaching aids.					
22	ET2	Teacher use the views and opinions of other partners in order to integrate the different disciplines of knowledge stems					
23	ET3	To connect with parent and colleagues, the teachers use electronic tolls such as email, weblog					
24	ET4	To increase teaching effectiveness and to increase his or her professional development, the teacher uses different educational technologies					

25	ET5	The teacher facilitates learning by using educational technology.					
26	ET6	The teacher applies educational programs that need computer and other educational technologies					
Research Base							
27	RB1	The teacher spends lots of times for investigation and research.					
28	RB2	The teacher follows the organization call for projects, especially projects that are related to education.					
29	RB3	The teacher interacts with the professors and researchers who are specialize in teaching discipline.					
30	RB4	The teacher publishes the result of his or her research to inform others about what he or she has done					
31	RB5	The teacher is interested in action research projects related to work environment. He or she is also interested in workshops related to project subjects					
32	RB6	The teacher is interested in action research projects related to work environment. He or she is also interested in workshops related to project subjects					
Educational Planning							
33	EP1	Teacher, design the lesson plans based on the needs and issues of student.					
34	EP2	The teacher has teaching experiences that apply them to improve students appropriate learning					
35	EP3	The teacher integrates knowledge, skills and content to provide intra-discipline learning opportunity for students					
36	EP4	The teacher uses different lesson plan according to curriculum subjects to upgrade student learning level					
37	EP5	The teacher's educational planning is according to knowledge and information of students					
Evaluation							
38	E1	The teacher evaluates his or her scientific performance during school year.					
39	E2	To improve learning process, the teacher uses the result of his evaluation as a factor to enforce changes.					

40	E3	The teacher uses different evaluation approaches to improve student educational advancements					
41	E4	Coordinating with school's principals, the teacher poses the result of his evaluation to parents					
42	E5	The teacher uses the result of achievement test to reform his or her teaching method and learning process.					
Development of Human Resources							
43	DHR1	The teacher has high expectation for learning.					
44	DHR2	The teacher considers individual differences when he or she is teaching					
45	DHR3	The teacher is aware of students' cognitive, social, emotional differences in learning					
46	DHR4	The teacher uses different views in teaching to consider students' differences					
47	DHR5	The teacher tries to relate students' learning experiences in different courses					

Appendix E

Proofread

Certificate of proofreading



Teachers' academic optimism: Prospects and Implications for professional development of teachers

By

Usama Altaf

National University of Modern Languages

It is certified that work title "Teachers' academic optimism: prospects and implications for professional development of teachers" conducted by Usama Altaf has been checked and proofread for language and grammatical mistakes.

Name: Naeem Chak

Designation: Assistant Professor

Institution: University of Aik

Signature: Naeem Chak

Date: 15/02/2025