A Survey Study on School Improvement at Secondary Level in District Gujranwala (Pakistan)

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Abstract

The study's main objective was to explore teachers' perceptions about their school improvement. For this purpose, the researchers developed a school improvement questionnaire and established a school improvement model by reviewing a comprehensive body of previous research. The researchers selected a sample of 100 male and female secondary school teachers through purposive sampling from 20 boys and girls school in district Gujranwala. The data was collected through a self-administered questionnaire validated through experts' opinions. It was pilot-tested to determine its reliability, which was established at $\alpha = .91$. Further, exploratory factor analysis of SIQ with six factors discovered high internal validity. Data was analyzed using mean scores, standard deviation, and independent samples t-test. The results showed that the Mean score of 3.97 and the standard deviation associated with all the factors of school improvement ranged from 0.88 to 0.98, indicating moderate variations in respondents' perceptions. The study revealed that male teachers perceived their schools' improvement (t = 1.89, p=0.05) significantly better than female teachers. The study recommended replicating another study with a larger sample in other districts of Pakistan.

Keywords: School Improvement, Secondary Schools, District Gujranwala.

Introduction

School improvement is regarded as an outlook to informative revolt that proposes to increase the student's learning outcomes and establish the school's dimensions for organizing change (Hopkins, 2003), particularly underlining the teaching and learning practice and surroundings that support this. School improvement is also an outcomes-oriented process, a journey with much discernment (Stoll, 2009). The utmost goal line of school improvement is to increase learners' growth and development; research displays that this is attained when schools encompass their capability for development.

In today's responsibility perspective, several schools considered "failing" and "low performing" sustain exceedingly dissimilar learner populations, different beliefs, religions, languages, and commercial conditions. Such variety is thought-provoking regarding the absolute choice of instructive desires that schools must consider and the existence of momentous information of learners whose wants naturally go beyond the abilities of various schools to report effectively. Such schools in most commands are now said to be responsible for educating all learners to equal high standards (Amjad et al., 2023, a, b, c).

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Subsequently, in the second half of the 1990s, investigators needed to expose the elements that clarify how institutes improve and in what way they keep this situation ended (Gray et al., 1999; Hallinger & Heck, 2011; Harris & Chapman, 2004; Hopkins, 2003; Mitchell et al., 2002). The early 2000s struck a period of high demands and enlarged administrative training for enlightening variation toward the perfection of students' results (Sundberg & Wahlstrom, 2012). The review of previous research aimed to inform the public about problems concerning school improvement and areas of vigorous knowledge that were yet known. "School improvement" is more employed in Canada and the United States. Different appraisals stated in The International Handbook of School Effectiveness Research remained mostly supportive in displaying an international view and added references about influences on school improvement (Teddlie & Reynolds, 2000).

Reeves (2000) reported that research was conducted to observe the school improvement plan in both 24 secondary and elementary schools in Scotland. His research study instigate that the elementary schools which made school improvement strategies using "good practice" had a progressive influence on students' achievement. On the other hand, the indication of influence was not grasped for secondary schools. School improvement includes increasing performance, establishing the ability to improve student outcomes, and deliberately ensuring reliable student realization. The school's improvement effect is exploited when the procedure is personalized to the school's essentials (Hopkins, 2020; Jackson et al., 2018).

In Canada, the Manitoba School Improvement (MSIP) project defined the positive effects on learner's education (Earl & Lee, 1998). The MSIP schools would be described using classifications, such as combined, extensive involvement of parents, students, teachers, community, management, and external enablers. The "Improving the Quality of Education of All" (IQEA) plan in the UK described the achievement in growing learners' success (Harris, 2001; Harris & Young, 2000). The MSIP and IQEA plans pooled the school improvement developing process that tangled stakeholders in bringing about administrative change.

Heads may pool accountabilities for performance; schools construct development teams, decision-making groups, and stakeholders. Evaluation is occasionally assumed by externals or by the school itself. Robust instructors are "hands-on leaders, involved with curriculum and instructional matters, confident in working directly with teachers, and frequently present in classrooms" (Horng & Loeb, 2010). Promoters advocate that short-term informal guidance can support the formation of new positive instructional beliefs and determine the value they place on instruction (Protheroe, 2009).

Benavot and Gad (2004) found that instructional time can be developed by following scheduled school open and close periods and further arrangements and by certifying availability for students and teachers to reach school on time. School leaders can upswing their instructional time by noticing staff for the duration of instruction, emerging and regularly implementing student and teacher attendance rules, frequent visits, and improving school assurance through motivation (Habib et al., 2024, a). The delivery of in-service training and monitoring of teacher contentment can also support lessening teacher absence and developing teacher impetus (Malik et al., 2024; Ong et al., 2024).

One of the school leader's first duties is introducing the school improvement practice by enlightening it to a meeting with parents, teachers, students, community members, and other stakeholders (Tabbasam et al., 2023; Tabassum et al., 2024). The school actively tries to find ways to build a strong connection with its local and broader community to increase student learning, engagement, and well-being. Partnerships with various stakeholders, education and training institutes, businesses, and community organizations are intentionally established to identify

student needs (Amin et al., 2024; Qureshi et al., 2023). These preparations provide access to experiences, practical support, and resources not presented within the school. Families are recognized as basic members of the school community and fellows in their children's learning. Partnerships are actively monitored to certify that they achieve intended outcomes and are rooted in the school's process.

Assessment in school improvement is gathering and analyzing data to understand and develop students' learning and overall school performance. Assessment can help identify the extent of strengths and weaknesses and inform decisions about the curriculum, teaching, and student engagement.

School functioning facilities can impact student learning. Adequate facilities can help schools improve their educational mission and support learning, ensuring physical safety and staff productivity. Maintaining and renovating building facilities is a continuing challenge that must be at the forefront of any school plan. The study conducted by Shami and Hussain (2005) concluded that the accessibility of physical facilities in schools had a meaningful influence on students' achievement. From the perspective of institutional facilities, the surroundings in which students study are significant, and lacking an appropriate atmosphere, actual learning cannot yield. According to Bruce (2006), learning culture is the third tutor, but the learning atmosphere must not be in itself; we must look at the surroundings. He examined the learning environment and found that it should provide various school resources continuously presented to learners. This allows them to develop interests and practice whatever they have learned. A clean environment has a positive effect on a learner's personality.

Personal development refers to improving oneself through different means, including building skills, increasing capacities, and promoting a positive outlook. Personal development is not just about succeeding in personal life; it is about becoming a mature individual proficient in handling life challenges with self-confidence. Personal development suggests that teachers are well versed in the school necessities; it decreases fatigue sensation, supports increasing self-esteem, promotes the association of well-being, and reduces undesirable reactions. The educational job is an essential duty that requires the ability to have responsive self-control, manage conflicts, and progress in educational rapport with all students. Therefore, personal development is the base of effective academic performance. A self-aware teacher will have thoughts of his own and the learners, who need much devotion, understanding, and deliberation (György, 2018).

Therefore, for the revision through education to occur, teachers must be aware of the setting, practice, and individual development. Hence, interactive and educational intellectual skills among school teachers signify a foundation to contest the pressure in the relationship between teacher and learner. Being a school teacher nowadays involves much accountability (appropriate style, several services, and a variety of roles). However, it means devotion, control, and desire; it means teaching to be and assisting the learners to improve as you have improved yourself (Herman, 2020).

The reviewed literature demonstrated that the quality indicators of school improvement are essential as they are vital for determining their improvement.

Objectives of the Study
1. To investigate the perceptions of teachers about their school improvement
2. To examine the gender-wise perceptions of teachers about their school improvement

Research Questions
1. What are teachers' perceptions of their school improvement?

2. Is there any significant difference in the perceptions of males and females about their school improvement?

Theoretical Framework

Schooling is a multilevel perception; it is supposed that learning is mandatory at individual, group, and school (OECD, 2010). Schools are gradually estimated to set their improvement plans on mark. It is also supposed that analyzing the condition of schools using data will help develop up-to-date decision-making regarding development standpoints (Ikemoto & Marsh, 2007; Schildkamp, 2019). Various studies show that teachers' perceptions are a valid school improvement measure.

Based on previous conclusions, the researchers organized the study that school improvement can be measured using these quality indicators (instructional program, involvement of stakeholders, assessment, functioning facilities, learning environment, and personal development) through teachers' perceptions who are profound observers of their school improvement.

Research Methodology

The research employed a quantitative approach. It found out about school improvement through the perceptions of public secondary teachers. The study followed a standard instrument development procedure that involved reviewing the related literature, developing items, ensuring content validity, and calculating the reliability of factors and the overall factors. Further, it included the Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) for defining the construct validity of School Improvement Questionnaire (SIQ) items. This research finds out the gender-wise perceptions of secondary school teachers regarding their school improvement.

Population and Sample

The study's accessible population comprised all teachers (N=1635) from registered secondary schools in the Gujranwala district. This research investigated school improvement through the perceptions of male and female secondary school teachers.

The study used a multistage sampling technique. In the first stage, one out of six districts of the Gujranwala division were randomly selected. In the second stage, the researcher selected 20 schools, which included 10 boys and 10 girls, using a proportionate stratified sampling technique. In the third stage, the researcher used a purposive sampling technique to select 50 male and 50 female public sector secondary school teachers. The total sample was 100 teachers from Gujranwala district.

Table 1: Demographic Information of Respondents

Gender	No of Schools	Arts	Science	No of Teachers (SSTs)
Male	10	30	20	50
Female	10	30	20	50
Total	**20**	**50**	**50**	**100**

We ensure that the demographic characteristics of respondents indicate a balanced representation of male and female teachers, with an equal distribution of 50 teachers each from 10 boys' and 10 girls' schools. The equal allocation of teachers specializing in arts and science (30 in arts and 20 in science for each gender) stresses the comprehensive nature of the sample, allowing for an

understanding of subject-specific insights into school improvement practices. This balanced demographic distribution strengthens the reliability and generalizability of the findings.

Instrument Development and Data Collection
Three steps were proposed for the process of scale development that contained construct operationalization, items development, and confirming the content validity. The researchers primarily defined the concept of school improvement using all six factors. Further, 31 items were developed that validated six factors (instructional program, involvement of stakeholders, assessment, functioning facilities, learning environment, and personal development) of the School Improvement Questionnaire (SIQ). The scales of the SIQ comprised strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5). The language of all items was very simple, and teachers understood them quickly.

Finally, the researchers confirmed the content validity of SIQ through experts' opinions. The experts concentrated on useless items, domain relevancy of items, and mistakes related to grammar. After the modification, the data was collected from 100 male and female SSTs for pilot testing, demonstrating high reliability (α=0.91). The values of Cronbach's alpha were calculated to assess the internal consistency of each construct. A value above 0.7 is generally considered acceptable, with values above 0.8 indicating good reliability (Abdul-Latif & Abdul-Talib, 2017). Data collection started after receiving the list of SSTs from the district. Education Officer (DEO), office Gujranwala. The researchers personally visited all public high schools in the Gujranwala district, met the school heads to obtain approval, and distributed the SIQ among SSTs in their schools. The researchers also met 100 SSTs, 50 male and 50 female teachers. Data was kept protected and confidential, and no evidence was shared with anybody inside or outside the school.

Data Analysis and Interpretation
The researcher thoroughly assessed the data suitability for factor analysis using Bartlett's Sphericity Test and Kaiser-Meyer-Olkin (KMO) measure. The results of Bartlett's test made a chi-square value of 10259.50 with a p-value of 0.001, indicating that the correlations between the variables are expressively different from an identity matrix, thus confirming the suitability of the dataset for factor analysis. Furthermore, the KMO measure was calculated to be 0.798, further supporting that the dataset is adequate and suitable for factor analysis. Aziz, Rehman, Danish, and Grolinger (2024) found that a KMO above 0.6 is acceptable for factor analysis. Following the data suitability analysis, we performed an Exploratory Factor Analysis (EFA) to find the essential factor building of the questionnaire. The analysis was conducted considering the eigenvalues, Cronbach's alpha, and factor loadings, which are critical for defining the number of factors to keep.

Table 2: Factor-wise Reliability

Factors		Mean	SD	Alpha (α)
Instructional program		3.76	0.93	0.86
Involvement of stakeholders		4.12	0.92	0.86
Assessment		4.07	0.89	0.84
Functioning facilities		4.01	0.95	0.83
Learning environment		4.06	0.88	0.83
Personal development	Overall	3.83	0.98	0.83
		3.97	**0.94**	**0.91**

Table 2 shows that the factors involvement of stakeholders (Mean= 4.12, SD= 0.92) and instructional program (Mean= 3.76, SD= 0.93) showed highest reliability value (.86). The factors, learning environment (Mean= 4.06, SD= 0.88), Functioning facilities (Mean= 4.01, SD= 0.95), Personal Development (Mean= 3.83, SD= 0.98) showed the same and least level of reliability (0.83). The overall Cronbach's alpha for the whole data was calculated to be 0.91, indicating good reliability and acceptable value.

Our Opinion on the reliability analysis in table 2 indicates the robust design and consistency of the School Improvement Questionnaire (SIQ). The high Cronbach's alpha values for "Involvement of Stakeholders" and "Instructional Program" reflect the coherence of the items measuring these factors. This reliability presents that these dimensions are central to the perception of school improvement and resonate strongly with the respondents. The overall alpha of 0.91 stresses the instrument's comprehensive reliability, supporting its usefulness as a diagnostic tool. As such, consistency validates the questionnaire's structure and ensures that the dynamics of school improvement are met with a high degree of internal consistency. These results confirm the robustness of SIQ and its possible application in broader educational contexts to inform meaningful interventions.

Initially, the researcher used Bartlett's Sphericity Test and the KMO measure to assess the data's suitability for factor analysis. The results of Bartlett's test produced a chi-square value of 10259.50, p=.001, and KMO=0.79, which is an acceptable level in social sciences. After that, the component analysis using eigenvalues was run.

Table 3: Eigenvalue for Each Factor

Factors	Items	Eigenvalue
Instructional Program	ITEM (1-6)	9.72
Involvement of Stakeholders	ITEM (7-11)	3.23
Assessment	ITEM (12-16)	2.48
Functioning Facilities	ITEM (17-21)	1.89
Learning Environment	ITEM (22-26)	1.81
Personal Development	ITEM (27-31)	1.63

Table 3 shows that eigenvalues represent the variance simplified by each factor in the data. Typically, eigenvalues of factors greater than one are considered significant. In this analysis, the eigenvalues ranged from 9.72 to 1.63. Given this distribution, retaining six factors was deemed necessary to capture the underlying structure of the data. This decision balances the need for simplicity with the need to maintain the explanatory influence of the model. The results of EFA revealed six distinct factors, aligning with the theoretical constructs of the instructional program: involvement of stakeholders, assessment, functioning facilities, learning environment, and personal development.

Our opinion on the eigenvalues in table 3 emphasizes the varying contributions of different factors to the total variance in school improvement perceptions. The "instructional program" factor, with an eigenvalue of 9.72, emerges as the most influential, capturing a substantial portion of the variance and underscoring its critical role in school improvement. The "personal development" has the lowest eigenvalue of 1.63, implying that while it is meaningful, its impact is more limited than other factors. This distribution shows a thoughtful balance in factor retention, ensuring simplicity while preserving the model's explanatory power. The precise alignment of the six retained factors

with theoretical constructs indicates the rigor and validity of the exploratory factor analysis process.

Table 4: Gender Wise Difference in School Improvement As Perceived by Teachers

Factors	Gender	N	Mean	SD	t-value	Sig
Instructional program	Male	50	3.85	0.92	2.48	0.01
	Female	50	3.66	0.94		
Involvement of stakeholders	Male	50	4.24	0.91	3.06	0.00
	Female	50	3.99	0.92		
Assessment	Male	50	4.15	0.90	1.95	0.05
	Female	50	3.99	0.88		
Functioning facilities	Male	50	4.04	0.96	0.56	0.57
	Female	50	3.99	0.94		
Learning environment	Male	50	3.87	0.96	-5.09	4.96e
	Female	50	4.26	0.73		
Personal development	Male	50	3.88	0.98	1.17	0.23
	Female	50	3.78	0.98		
Overall		**100**	**3.97**	**0.94**	**1.89**	**0.05**

Table 4 shows that independent samples t-test in term of school improvement males were found to be significantly better as compared to female high on factors: instructional program, (M= 3.85, SD= 0.92, t=2.48, p=.001), involvement of stakeholders, (M= 4.24, SD= 0.91,t= 3.06,p= 0.00), assessment, (M= 4.15, SD=0.90,t= 1.95, p= 0.05), functioning facilities, (M= 4.04, SD= 0.96,t= 0.56,p= 0.57), personal development, (M= 3.88, SD= 0.98,t= 1.17,p= 0.23) except the factor, learning environment, female were significantly better as compared to male (M= 4.26, SD= 0.73,t= -5.09 p= 4.96e). Male perceptions were significantly better overall than female perceptions (t = 1.89, p=0.05).

Our opinion on the findings in table 4 provides insights into gender-based perceptions of school improvement. Male teachers rated higher on factors such as "instructional program" (M = 3.85, SD = 0.92) and "involvement of stakeholders" (M = 4.24, SD = 0.91), presenting a more substantial alignment with these aspects of school development. On the other hand, female teachers excelled in "learning environment" (M = 4.26, SD = 0.73), indicating their focus on fostering inclusive and supportive surroundings. These results point to distinct gendered perspectives that could inform targeted interventions, stressing collaborative approaches to bridge perception gaps and enhance overall school improvement.

Findings
The findings of the present study are presented about each of the research questions which directed the study:
1. The study showed an overall mean score of 3.97 for school improvement from the perspective of secondary school teachers, with standard deviations ranging between 0.88 and 0.98. These results suggest moderate variability in teachers' perceptions, indicating a consensus on school improvement efforts with some individual differences. This variability could be attributed to differences in school resources, administrative support, or teachers' individual experiences.

2. School improvement factor, involvement of stakeholders recognized a higher mean value (M=4.12, SD= 0.92) surrounded by all its factors. This stresses collaboration and engagement with parents, community members, and other stakeholders in driving school improvement. The elevated importance of stakeholder involvement may reflect the cultural emphasis on collective decision-making and shared responsibilities in educational contexts, as supported by studies stressing the benefits of community participation in schools.

3. The second highest mean value was found in the assessment factor (M= 4.07, SD= 0.89). This finding stresses the essential role of continuous evaluation in improving teaching practices and student outcomes. The relatively high rating suggests that teachers recognize the value of assessment in identifying gaps and making data-driven decisions, consistent with global educational trends advocating for evidence-based practices.

4. The least value was found in the instructional program factor (M = 3.76, SD = 0.93). The lower score might indicate challenges such as outdated curricula, a lack of professional development opportunities, or insufficient instructional resources. This finding aligns with the literature emphasizing the need for targeted interventions to enhance teaching methodologies and curriculum relevance.

5. The factors of SIQ showed a high level of reliability (α =.91) with a factor-wise reliability. The findings of this study are also reliable, as evidenced by various former research studies that show that the teachers' scores of school improvement are consistent. These results validate the SIQ as a robust tool for measuring school improvement perceptions, consistent with prior studies employing similar methodologies. The high reliability ensures the credibility of the data and strengthens the conclusions drawn from the analysis.

6. Gender-wise analysis of school improvement produced the following results

a. Male teachers were found significantly better as compared to female high on factors: instructional program, (M= 3.85, SD= 0.92, t=2.48, p=.001), involvement of stakeholders, (M = 4.24, SD = 0.91,t = 3.06,p = 0.00), assessment, (M= 4.15, SD=0.90,t= 1.95, p= 0.05), functioning facilities, (M= 4.04, SD= 0.96,t= 0.56,p= 0.57), personal development,(M= 3.88, SD= 0.98,t= 1.17,p= 0.23). This could reflect a greater alignment between male teachers' experiences and the institutional priorities of school improvement efforts.

b. Regarding the learning environment factor, females were significantly better than males (M= 4.26, SD= 0.73, t= -5.09, p= 4.96e). This finding resonates with research suggesting that female educators often prioritize relational and environmental aspects of schooling.

c. Overall, male perceptions were significantly better than female perceptions, t = 1.89, p=0.05.

Discussion on Results

The survey study involved six factors of the school improvement questionnaire. Exploratory factor analysis (EFA) was performed using secondary school teachers' perceptions to get an initial instrument model. The confirmatory factor analysis was executed and found that the Chi-square value established that the overall model fit was highly satisfactory. The factors of SIQ showed a high level of reliability (α=.91) with factor-wise reliability ranging from .83 to .86. The current study's findings are also reliable with several previous types of research that teachers' scores of school improvement are consistent. Factor loadings represent the correlation between observed variables and the underlying latent factors in factor analysis. This analysis converted the loadings to absolute values to simplify interpretation. High factor loadings indicate a strong relationship between an item and its corresponding factor. For example, items in the "instructional program"

section exhibited high loadings (ranging from -0.22 to 0.15), suggesting that these items consistently measure the intended construct.

In this study, all factors had eigenvalues above this threshold, with the "instructional program" section having the highest eigenvalue of 9.72. This implies that the factor associated with the instructional program explains a momentous portion of the variance in data, underscoring the importance of this construct in the overall model. In this analysis, all constructs had Cronbach's alpha value above 0.8, confirming that the items in these sections are consistent and reliable measures of the intended constructs. Previous studies (Earl & Lee, 1998; Harris, 2001; Harris & Young, 2000; Hopkins, 2020; Jackson et al., 2018) delivered evidence that tools, including quality performance standards of school improvement, are valid. The current study also established valid and reliable tools constructed on quality performance standards. The gender-wise results in School Improvement indicate that the different perceptions between male and female teachers regarding school improvement are significant, with male teachers observing their school improvement well. Based on the results of the Cronbach alpha, factor relationships, exploratory factor analysis, independent sample t-test, and findings of various research studies (Bottoms, 2012; Creemers & Reezigt, 1997; Reeves, 2000), the researchers suggested that SIQ is valid and reliable and might be used to measure school improvement through teachers' perceptions.

Conclusion and Recommendations

The findings suggest that focusing on the six identified key areas—instructional program, involvement of stakeholders, assessment, functioning facilities, learning environment, and personal development- could significantly impact the school improvement initiatives. The high factor loadings and eigenvalues confirm that the selected factors are sufficient to capture the essential elements of the questionnaire, making it a valuable tool for assessing school improvement efforts. Furthermore, the high-reliability scores across most sections indicate that the school improvement questionnaire is a robust tool for measuring. Further, the study also revealed a moderate variation in respondents' perceptions. Male and female teachers' perception of school improvement is statistically significant, with male teachers perceiving it more positively.

In-service training programs for secondary school teachers may be organized more frequently for school effectiveness. Teachers' views may be considered when formulating education policies as they are the fundamental stakeholders of the schooling practice. Secondary school head teachers need to pay more consideration to their teachers' monitoring and mentoring for school improvement. A qualitative follow-up study may offer good perception and definite school improvement data. This study may be replicated to a larger sample of teachers from all districts of the Gujranwala division. Similar studies may be conducted in other districts so that recommendations may have justifications for further policy-making on secondary education.

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