DISTRIBUTIVE LEADERSHIP BEHAVIOR, PARENTAL ENGAGEMENT AND THEIR IMPACT ON STUDENTS'ACADEMIC PERFORMANCE: A MEDIATING EFFECTOF LEADERSHIP BEHAVIOR

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ABSTRACT
Children are active learners who continually attempt to balance their internal conceptions and view of reality with extrinsic recreations or the outer facts children encounter in their world. The interrelationship between humans and their social and physical environments significantly impacts the education and growth of children. An increasing body of research has shown that their home learning experience is vital in figuring out what they are interested in. This shows how important it is for parents to be involved in their children's learning process, and an educator's leadership behaviors indirectly magnify this process. This research aimed to determine the scope and level of parental engagement activities in schools and their impact on parents' participation with their children at home. Furthermore, the impact of parental involvement at home on their children's academic performance is also being studied.

The sample consisted of 175 principals, 1575 teachers, 1750 pupils, and 1750 parents from six districts of Khyber Pakhtunkhwa, Pakistan. The data was acquired using established and self-administered questionnaires for leadership behavior and parental engagement. The result shows that the mediational effect of distributive leadership behaviors on parental engagement at home is outside the interval and is not working as a mediator. The educator's work experience significantly affects parental engagement at +1 standard deviation of work experience. Furthermore, parental engagement at home has a tremendous and positive effect on students' academic performance.

KEYWORDS
Leadership behavior, parental engagement, mediation and moderation, student academic performance

INTRODUCTION
There has been a considerable rise in the study of distributive leadership behaviors and parental engagement in the past few decades. The investigation of leadership behaviors plays a critical role in a school's improving performance and leadership. The major influencing factors are the teachers, parents, and students, who must be treated respectfully. Leaders have to encourage them to do their best. Parents mostly like to engage in their children's schooling when educational leaders exercise distributive leadership behavior. Educators should be aware of their abilities and use them to improve school performance. One of the most persistent results of the latest studies on successful educational leadership is that principals should spread authority among their staff rather than concentrate it in one person's hands (Leithwood, Jantzi, Ryan, & Steinbach, 1997; Day et al., 2000).

Our purpose was to select a better approach that may be extremely important for the academic system. After reviewing various options, we focused on distributive leadership behavior and parental engagement to improve the children's performance. We investigated several of these elements connected to distributive leadership behavior and parental engagement, which are critical to the students' and institutes' success. During the theoretical phase of the research, we found that the link between the three research domains, such as distributive leadership behavior, parental engagement, and a student's academic performance, had never been studied collectively previously. That is why we chose these domains to include in our study. The connection that we discovered between the three variables piqued our curiosity. Our primary purpose is to investigate distributive leadership, parental engagement, and their effects on students' academic performance. For this purpose, we chose to examine six districts in Pakistan's Khyber Pakhtunkhwa province.

The currently accepted leadership model, which emphasizes a single set of talents, experiences, and abilities, is unproductive in achieving a sustainable quality of teaching and learning in school (Fullan, 2001). A great management team is built on the foundation of strong leadership. Leadership is a critical factor in achieving positive outcomes. In essence, leadership entails empowering others to participate in creating something extraordinary (Kouzes & Posner, 2007).

Distributive leadership behavior

The skill of encouraging people to work together toward a single goal is known as leadership (Kouzes & Posner, 1995). Leadership is the process of one person influencing others to control, organize, and facilitate their activities (Yukl, 2008, pp. 708–722). Recent research has emphasized leaders' potential to empower people when institutional goals are fulfilled and realized (Kouzes & Posner, 1995). Due to the growth of collaboration and networking, traditional institutions are being altered, and leadership is now being reshaped. This outcome requires redesigning leadership behaviors within the school (Woods, Bennett, Harvey, & Wise, 2004, pp. 439–457). One theory that provides brief leadership activities that affect others is distributed leadership. Distributed leadership is increasingly extensively utilized in school leadership discussions and is receiving a growing empirical basis (Spillane et al., 2001, pp. 23–28; Gronn, 2002, pp. 423–452; Harris, 2002, pp. 15–26).In the 1980s and early 1990s, ideas regarding significant historical impacts on human perception led to the sharing of this thinking among substances and societal elements in a given setting, resulting in the re-conceptualization of leadership (Cole & Engestrom, 1993). According to Copland (2003, pp. 375–395), leadership is "a set of responsibilities or traits traded by principals, teachers, and other professionals, families, and populations, and many in the school, through the use of a much larger portion of the school community." This strategy entails establishing and maintaining widely distributed leadership structures, procedures, and competencies in school communities.

Epstein's parental engagement model

Theoretical perspectives serve as a framework for study and inspire scholars to explore new social science studies. This phrase is also true when it comes to incorporating parents. According to Piaget's theory of cognitive development, children are active learners who continually attempt to balance their internal conceptions and view of reality with extrinsic recreations or the outer facts children encounter in their world (Piaget, 1981).Vygotsky's (1978) socio-cultural assumption emphasized the interrelationship among humans and their social and physical environments. He argues that societal elements significantly impact education and growth. According to Rieber and Robinson (2004), individuals are affected by family, friends, and the environment. These three theories have significantly impacted the research field and are thus being investigated regarding parental involvement. The features of a child's body are

influenced by their parents and surroundings (Bronfenbrenner, 1979). Children's societal, political, natural, and financial settings affect them (Bronfenbrenner, 1986, pp. 723–742).Epstein's parental engagement model (1995, pp. 701–712), a pioneer in parent engagement research and practice, was employed in this study. She has divided parental engagement into six main types: parenting, communicating, volunteering, learning at home, decision-making, and community collaboration. The use of these six areas in a comprehensive school or family collaboration program has been considered (Sheldon & Epstein, 2005, pp. 107–138).

The vision, fundamental beliefs, traditions, and intentional direction of leaders are essential determinants in the effectiveness of instructional techniques. By increasing parental engagement, schools with a strong conviction in these concepts have provided their students with various options for success. When instructors collaborate with parents, it also helps them be more effective in their efforts (Australian National College for School Leadership, 2012). Parent's failure to offer the essential support has a detrimental influence on the educational process. In children, parental ineptitude frequently leads to societal issues such as fraud, malpractice, and unequal favoritism. Parents who connect with their children are well-versed in the school process and have a firm grasp on it, resulting in positive attitudes about school (Akbar, Younes, & Chishti, 2017).Evidence demonstrates that parental involvement techniques concentrating on tying family, teacher, and student behaviors to educational outcomes have the most impact. When parents and teachers understand their duties in education, family behaviors support learning, and when the school and parents have consistent, positive relationships (Emerson, Fear, Fox, & Sanders, 2012).

Parental engagement and students' academic performance
Research shows that parental supervision, events, and engagement at home and school impact their children's performance, even when the ability of students and the family's socioeconomic position are considered (Australian Council on Parents, 2009). However, a growing amount of evidence shows that enhancing sensible precautions in the lives of children and adolescents might enable children to avoid behaviors that put their health and educational success at risk (Hawkins et al., 1999, pp. 226-234; Resnick et al., 1997, pp. S3-S9). According to Akbar, Younes, and Chishti (2017), parental engagement directly influenced eighty-seven percent and had an indirect effect of thirteen percent on young adolescents' school performance. According to specific research, such as Singh et al. (1995, pp. 299–317), the consequences of family activities related to the student's success vary with age, and extensive parental engagement in the children's secondary schools is critical for their success.

RESEARCH OBJECTIVES
1. To determine the existence and strength of principals' and teachers' leadership

behaviors in the schools.
2. To evaluate the existence and strength of principals and coordinate teachers' parental engagement practices in the school.
3. To determine the impact of educators' leadership behaviors on parental engagement in their children's education.
4. To evaluate whether educational leaders' behavior and work experience mediate and moderate the relationship between their parental engagement efforts in the institutions and parental engagement in their children's education at home.
5. To measure parental engagement effects on their children's academic performance.

RESEARCH QUESTIONS
1. Whether or not a leader's distributive leadership behavior exists at school and whether it positively affects parental engagement in the school and at home?
2. Whether principals and coordinating teachers' parental engagement exercises affect parental engagement in their children's schooling at home and whether or not leadership behavior and their work experience mediate and moderate the relationship between their practice to engage parents in the schools and parental engagement at home, respectively?
3. Does parental engagement in their children's education affect students' academic performance?

RESEARCH METHODOLOGY
Kouzes and Posner (2003) developed a standardized questionnaire called the Leadership Practices Inventory (LPI). We used LPI to collect data from principals and coordinate teachers and parents. Kouzes and Posner (2003) converted the five excellent leadership practices into behavioral statements so principals and coordinating teachers in private and public institutions may evaluate their abilities and utilize the information to develop their leadership talents. The Leadership Practices Inventory (LPI) is a rating scale survey that assesses leaders in five areas: (1) modeling the way, (2) inspiring a shared vision, (3) challenging the process, (4) enabling others to act, and (5) encouraging the heart. Each of the five practices is evaluated using six statements. Participants would use a 5-point scale to indicate how much they agree or disagree, such as (1) strongly disagree; (2) disagree; (3) uncertain; (4) agree; (5) strongly agree with the statement's description.

The researcher chose the LPI because it is a well-established instrument that participants can understand and complete in a short amount of time. Furthermore, the researcher determined to assess principals' and coordinate teachers' leadership behaviors using the LPI since the LPI's five dimensions are similar to the features of various leadership theories, mainly distributed leadership. The LPI could assess leadership to ensure organizational performance (Kouzes & Posner, 1993).

The LPI may also be used as a strategic leadership instrument, allowing individuals to examine their leadership actions and behaviors (practices) and, as a result, improve their leadership skills. Previous research has supported the LPI's reliability and validity, and this new study adds to the body of evidence that the LPI can reliably measure leadership behaviors and competencies (Kouzes & Posner, 1993). Rouse (2005) utilized the LPI to investigate principal leadership practices and teacher opinions in Sullivan County. Even though the LPI was not expressly established for distributed leadership, the five basic leadership practices are connected to the elements of distributed leadership behavior. Principals completed the LPI-Self, teacher leaders, and parents' LPI-Observer regarding their principals and coordinating teachers.
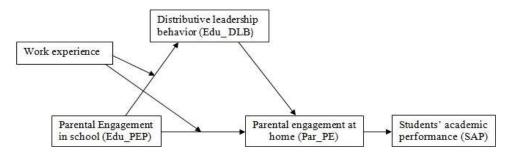

Figure 1: Hypothesized model

Epstein (1995, pp. 701–712), in parent engagement research and practice, identified six areas of parental engagement: (1) parenting, (2) communicating, (3) volunteering, (4) learning at home, (5) decision-making, and (6) community collaboration. The existence and strength of parental engagement practices (Edu_PEP) were assessed using the parental engagement questionnaire developed by (Salinas, Epstein, and Sanders (1997), pp. 122-125). These six engagement standards (Sheldon & Epstein, 2005a, pp. 107–138) have been considered for use in a comprehensive school, family, and community partnership program. There are 46 statements on this scale for measuring parental engagement practices (Edu_PEP). Furthermore, the scale for parental engagement (Par_PE) at home developed by the Appleseed project (2014) for parents contains the six variables mentioned above, based on Epstein's (1995) analytical model and includes 23 items. This study used questionnaires and subscales for the various factors discussed above.

Research questions "1" and objectives "1 and 2" were set and tested using appropriate statistical tools. Data from principals and coordinating teachers has been tested via the standardized questionnaire developed by Kouzes and Posner (2003).

Research questions "2" and objectives "3 and 4" were set and tested using appropriate statistical tools. Data obtained from principals and coordinated teachers via the

standardized questionnaire developed by (Salinas, Epstein, and Sanders (1997), pp. 122–125) has been tested. The model (1) was used to determine the influence of Edu_PEP from the school side on Par_PE at home and using Baron and Kenny (1986)-cum-Kenny 2012) mediation analysis model 2(a-d) and moderated mediation model "3" to answer question 2 and objective 3 and 4.

$$Par\_PE = f(Edu\_PEP, e) \tag{1}$$

$$Y \text{ (or Par\_PE)} = c_0 + c_1 X \text{ (or Edu\_PEP)} + e_1 \tag{2(a)}$$

$$M \text{ (or DLB)} = a_0 + a_1 X \text{ (or Edu\_PEP)} + e_2 \tag{2(b)}$$

$$Y \text{ (or Par\_PE)} = c'_0 + c'_1 X \text{ (or Edu\_PEP)} + b\, M \text{ (or DLB)} + e_3 \tag{2(c)}$$

$$c = c' + ab \tag{2(d)}$$

$$Y \text{ (or Par\_ PE)} = i + aX \text{ (or Edu\_PEP)} + bM \text{ (or Exp)} + cXM \text{ (or Edu\_PEP x Exp)} + e \tag{3}$$

Research questions "3" and objective "5" were set and tested using appropriate statistical tools. Data was obtained from principals and coordinating teachers via the standardized questionnaire developed by the Appleseed project (2014) based on Epstein's (1995, pp. 701-712) activity model. The following regression models have been used for achieving the mentioned research objective:

$$SAP = f \text{ (Par\_PE)} \tag{4(a)}$$

$$Y \text{ (or SAP)} = \beta_0 + \beta_1 X \text{ (Par\_PE)} + e \tag{4(b)}$$

Research population and sampling

All institutional heads, co-ordinate teachers, class ten students, and parents from public and private high schools in Khyber Pakhtunkhwa, Pakistan, were included. The researchers chose 175 schools in six districts with 175 principals for this research. However, only 129 (74%) of the questionnaires were returned. The sample size for teachers was chosen from each school among subject teachers who teach the 10th grade at each institution and coordinators who work with parents. Our sample for this study comprises 1575 teachers, with nine from each school. Instead of 1575 questionnaires, the researcher got 1066 (68%) of them. The sample size was 1094, according to Yamane's method for determining a student's sample size (n) at ±3 percent precision (e) levels. But for simplicity, 1750 students were selected (ten from each institute) and their parents, who were educated and capable of responding. Instead of 1750 questionnaires, the researcher got 1195 (68%) of both respondents. The results of our quantitative investigation are provided in the analytical section of the paper. Valuable suggestions that positively affect the leaders' behavior and parental engagement are also provided.

DATA ANALYSIS AND RESULTS
Whether or not a leader's distributive leadership behavior exists at school and whether it positively affects parental engagement practices in the school

To investigate the existence of distributive leadership behaviors in the schools, we applied descriptive statistics and a one-sample t-test. In table 1, all respondents (principals', co-ordinate teachers, and parents) mean values for all factors of DLB are higher than the average value. The mean values of participants for all sub-variables of DLB (MW, ISV, ChP, EOA, and EH) are averaged towards the agreed side of the questions posed, as shown. A one-sample t-test was utilized on the three respondents' responses to determine statistically significant mean values. The findings proved that mean values are statistically significant, demonstrating that distributive leadership behaviors exist and are exercised in institutions; the parents' actions reinforce this result.

Table 1: *Descriptive statistics and one sample t test of respondents' principal coordinate teachers, and parents of DLB*

	N	Mean	SD	One Sample t- test t - value Sig - value		Mean diff
Prin_MW	129	3.6422	.61424	11.874	.000	.6422
T_MW	1066	3.4407	1.0637	13.528	.000	.4407
Par_MW	1195	3.6923	.6583	36.356	.000	.6923
Prin_ISV	129	3.5698	.72069	8.979	.000	.5698
T_ISV	1066	3.0990	1.0396	3.107	.002	.0989
Par_ISV	1195	3.6636	.67426	34.022	.000	.6636
Prin_ChP	129	3.6460	.59658	12.299	.000	.6460
T_ChP	1066	3.1377	1.1277	3.988	.000	.1377
Par_ChP	1195	3.6636	.83143	18.330	.000	.4409
Prin_EOA	129	3.6460	.59658	12.299	.000	.6460
T_EOA	1066	3.1377	1.1277	3.988	.000	.1377
Par_EOA	1195	3.4409	.83356	18.046	.000	.4352
Prin_EH	129	3.7765	.53694	16.425	.000	.7765
T_EH	1066	3.3554	1.1730	9.889	.000	.3554
Par_EH	1195	3.4623	.8106	19.717	.000	..4623
Prin _ DLB	129	3.6552	.5399	13.793	.000	.6552
T_DLB	1066	3.2341	1.0477	7.299	.000	.2341
Par_DLB	1195	3.5383	.4071	45.762	.000	.5389

In Table 2, using principals' and co-ordinate teachers' views, we examined the existence of parental engagement practices in schools. That is statistically significant, except for teachers' opinions about volunteering, which mean "recruit and mobilize

parental help and support," which is statistically insignificant. Similarly, the parenting factor, which means "assisting all families in creating home situations that support children as students," does not statistically significantly exist, as shown below.

Table 2 *Descriptive statistics and one sample t test of Edu_PEP*

	N	Mean	SD	One Sample t- value	Sig value	Mean diff
					t - test	
(Prin _ PT)	129	3.8217	.76495	12.200	.000	.82171
(T _ PT).	1066	2.8583	1.2199	-3.791	.000	.14165
(Prin _PSC)	129	3.7207	.66166	12.372	.000	.72075
(T _ PSC)	1066	3.0584	1.0521	1.813	.070	.05843
(Prin _ VT)	129	3.6550	.75078	9.909	.000	.65504
(T _ VT)	1066	3.0136	.99726	.445	.656	.01360
(Prin _ LH)	129	3.7694	.61920	14.112	.000	.76938
(T _ LH)	1066	3.3161	1.1093	9.305	.000	.31614
(Prin _ DM)	129	3.6785	.66204	11.640	.000	.67848
(T _ DM)	1066	3.2822	.97263	9.474	.000	.28223
(Prin _ CC)	129	3.7736	.75886	11.579	.000	.77364
(T _ CC)	1066	3.1475	1.0011	4.809	.000	.14747
Prin _ PEP	129	3.7365	.64541	12.961	.000	.73650
T _ PEP	1065	3.1146	.95048	3.935	.000	.11460

In table 3, the dummy-variable approach was applied to evaluate the compared data of the six elements of Edu_PEP for principals and subordinate teachers. As a result, the two respondents had distinct perceptions about all six dimensions of parental engagement practices.

Table 3: *Parental engagement practices comparative statistics using dummy variable approach*

Variable	Principal β_1	t-value	sig-value	co-ordinate teachers (β_0)	t-value	sig-value
Parenting	3.821	8.761	.000	2.858	79.12	.000
Parent-school communication	3.72	6.983	.000	3.08	98.15	.000

Volunteering	3.655	7.066	.000	3.01	101.04	.000
Learning at home	3.769	4.555	.000	3.32	101.42	.000
Decision-making	3.678	4.502	.000	3.28	113.49	.000
Collaboration with the Community	3.773	6.868	.000	3.15	105.06	.000
Parental engagement practices	3.737	7.242	.000	3.11	109.98	.000

Parental engagement practices in schools affect parental engagement in their children's education at home

To investigate research question 2 and objectives (3 & 4) we test the effects of "Edu _ DLB" and "Edu_PEP" on Par_PE. While for objective "4" tested mediation and moderation relations of DLB and work experience between Edu_PEP and Par_PE.

$$Par\_PE = c_0 + c_1 Edu\_PEP + c_2\ DLB + e_3 \qquad\qquad 6(a)$$

Par_PE = .433 + .803Edu_PEP + .043DLB

       (.148)   (.030)   (.014)   (Std. error)

       (2.926) (26.331)   (3.173)   (t-val)

       (.003)   (.000)   (.002)   (P - Values)

$F = 361.494$, $p < .01$, $R^2 = .378$, $R^2_{adj} = .376$, N= 1195   6(b)

The determined model 6(b) is significant statistically ($F = 361.494; p<.01$), with "Edu PEP" at $(t = 26.331; p<0.01)$ and the educator's distributive leadership behavior (DLB) at $(t = 3.173; p<.01)$ both contributing to the dependent variable, Parental Engagement (Par_PE).

Mediation Analysis

For mediation analysis the required regression model was carried out, as given below.

Par_PE = 0.556 + .807 Edu_PEP

       (0.143)   (0.030)   (Std. error)

       (3.879)   (26.600)   (t-Statistics)

       (.000)   (.000)   (P - Values)

$F = 707.539$ at $p<.01$, $R^2 = .372$, $R^2_{adj} = .372$, N= 1195   7(a)

DLB   = 3.383 + .104 Edu_PEP

       (.060)   (.018)   (Std. error)

       (56.151)   (5.702)   (t-Statistics)

       (.000)   (.000)   (P - Values)

$F = 32.508$, $p < .01$, $R^2 = .027$, $R^2_{adj} = .026$, N = 1195   7(b)

Par_PE = .433 + .803 Edu_PEP + .043DLB

(.148)	(.030)	(.014)	(Std. error)
(2.926)	(26.331)	(3.173)	(t-val)
(.003)	(.000)	(.002)	(p-val)

$F=361.494$, $p<.01$, $R^2 =.378$, $R^2_{adj} = .376$, N=1195.   7(c)

In the above models 7(a-c), the coefficients c, $c^/$, a, and b have been calculated. According to Kenny (2012), calculating "c" from the model (7a) is not encouraged. However, for the following model, "c" should be interpreted as "$c^/$+ ab" and not directly computed.

In derived models 7(a–c), the role of variable Edu_PEP has appeared to be extremely significant.

Total effect = Direct effect + Indirect effect   8(a)

$$c = c^/ + ab$$ 8(b)

Substituting the values in equation 8(b)

c = .803 + (.104*.043)

c = 0.8075

Out of total effect "c" of Edu_PEP on Par_PE, direct effect $c^/$ = .803 and indirect effect a*b = .104*.043 = .00447

According to Kenny (2012), we must split the total effect into direct "$c^/$" and indirect "a*b" effects using the following equations (9a & b) in contemporary mediation analysis.

Direct effect (%)   = ($c^/$/c) x 100   9(a)

Direct effect (%)   = (0.803/0.8075) x 100 = 99.44%

Indirect effect (%) = (ab/c) x 100   9(b)

Indirect effect (%)=(0.00447/0.8075) x 100 = 0.5536%

The researcher calculated direct and indirect effects, revealing that the variable "Edu_PEP" appears to influence 99.44 percent of the population directly using

equations 9 (a–b). "Distributive Leadership Behaviors" has a 0.55 percent indirect (mediation) influence on "Par_PE." In most cases the three coefficients ($c^/$, a, and b) are enough. However, the subsequent multiplication of "a*b" accounts for indirect or (mediation) effects, and the researcher must test the result for statistical significance using the Sobel test to check H_0: ab=0.

Z_{ab}= ab/ S_{ab} 10(a)

According to the Z-distribution, if ab = 0, ab/S_{ab} falls within the ±1.96 range; otherwise, it falls outside the defined range. Where S_{ab} needs to be measured, the following equations should be used:

$S_{ab}=\sqrt{(a^2S^2_b+ b^2S^2_a)}$ 10(b)

The S_a and S_b are the standard errors of coefficients "a" and "b", respectively.

S_{ab}= 5.520131882 x 10^{-3}

Z_{ab}= .104 x .043/ 5.520131882 x 10^{-3}

Z_{ab}= 1.7892

The statistic Z_{ab} for DLB's mediation effect (ab) on Par_PE is outside the ±1.96 interval, showing that the mediation consequences on the variable Par_PE are statistically insignificant.

Moderated Mediation Model

The distributive leadership behavior of educators collectively regressed on the educators' parental engagement practices (Edu_PEP) and the moderator's work experience, whereas Edu_PEP with educators' experience in interaction form and the required moderation analysis approach model 7 (Hayes, 2018) was carried out as given below.

$$DLB = i + a\ Edu\_PEP + b\ Exp + c\ (Edu\_PEP \times Exp) + e_1 \qquad 11(a)$$

$$DLB = 3.7031 + 0.1178 Edu\_PEP + 0.0077 Exp + 0.0087 (Edu\_PEP \times Exp) + e$$

(216.95)(6.49)	(-4.15) (4.2558)	(t-val)	
(.0171) (.0182)	(.0019) (.0020)	(s.error)	
(.000) (.000)	(.000) (.000)	(p-val)	11(b)

The interaction between Edu_PEP in schools and work experience was statistically significant (c =.0087, s.e =.0020, p < .01), indicating that educators' work experience moderates the effect of Edu_PEP on DLB.

Table 4: *Conditional effects of the focal predictor at values of the moderator*

Experience	Effect	se	t	p	LLCI	ULCI
-7.7067	.0506	.0229	2.2050	.0276	.0056	.0956
.0000	.1178	.0182	6.4887	.000	.0822	.1534
7.3830	.1996	.0276	7.2243	.000	.1454	.2539

In table 4, at -1 standard deviation of work experience (*b =.0506, s.e. =.0229, p<.05*), the influence of educators' parental engagement practices at school was positive and significant. The result is positive and significant at the mean value of work experience (*b =.1178, s.e. =.0182, p<.001*), and a positive and significant predictor at +1 standard deviation of work experience (*b =.1996, s.e. =.0276, p<.001*). However, the slopes get more positive as we proceed from low to high experience levels.

$$Par\_PE = i + a\ Edu\_PEP + b_1 Exp + c\ (Edu\_PEP \times Exp) + e_1 \qquad 12(a)$$

$$Par\_PE = 4.5378 + .0194 Edu\_PEP + .0044 Exp + .0040 (Edu\_PEP \times Exp) + .0464\ DLB + e_1 \qquad 12(b)$$

Parental engagement with their children at home was regressed onto the Edu_PEP, work experience, the interaction term (i.e., Edu_PEP x Exp), and the leader's behaviors (DLB). The interaction term was significant at p<.01, showing that the direct effect of (Edu_PEP) on the parental engagement of parents (Par_PE) was moderated by experience.

Table 5: *Conditional effects of the focal predictor at values of the moderator*

Experience	Effect	se	t	p	LLCI	ULCI
-7.7067	.0115	.0157	.7357	.4620	-.0192	.0422
.0000	-.0194	.0126	-1.5379	0.1243	-.0440	.0053
7.3830	-.0569	.0192	-2.9607	.0031	-.0947	-.0192

In table 5, at -1 standard deviation of work experience, the influence of the moderator was insignificant ($b = .0115$, s.e. $= .0157$, $p > .10$). The effect was also insignificant at the mean of work experience ($b = -.0194$, s.e. $= .0126$, $p > .10$). The result was a significant predictor at +1 standard deviation of work experience ($b = -.0569$, s.e $= .0192$, $p < .01$).

Does parental engagement in their children's education affect students' academic performance?

To investigate research question 3 and objectives "5"data obtained from parents and their children via the standardized questionnaire developed by Appleseed Project (2014). In the given regression model:

SAP = f (Par_PE)   13(a)

Y (or SAP) = $\beta_0 + \beta_1$X (Par_PE) + e   13(b)

Where SAP = Students' academic performance

SAP = $\beta_0 + \beta_1$ Par_PE + e   14(a)

SAP = 169.328 + 55.911 Par_PE + e

      (18.810) (5.336)   (Std. error)

      (9.002)   (10.479)   (t-Statistics)

      (.000)   (.000)   (P - Values)

F = 109.805, p<.01, $R^2 = .084$, $R^2_{adj} = .084$, N =1195   14(b)

The estimated model 14 (b) is statistically significant (F = 109.805; p<.01), and parental engagement as perceived by parents and students is found to have a positive contribution to the dependent variable, student academic performance (t = 10.479; p<.01). These results reinforce the view that parental engagement dramatically affects students' academic performance in school.

DISCUSSION

This research aimed to look at high school principals' and coordinating teachers' distributive leadership behaviors in involving parents in their children's schooling to improve students' academic performance. A closer look finds that principals rated the requirements for factors like modeling the way, inspiring a shared vision, challenging the process, enabling others to act, encouraging the heart of leadership behaviors, and constituting variable distributive leadership behavior higher than teachers. Parents give the same answers about the teachers' leadership behaviors. Understandably, principals

and teachers behave in a certain way. This result aligns with the Elmore (2000) distributed leadership theory, which says that leadership is the "link" that drives an organization's improvement by appreciating, recognizing, and maximizing different skills to facilitate learning and performance and exemplify the values. However, the low levels of interest exhibited in related aspects of leadership behavior suggest that educators who are not strongly dedicated to improving behavior may be able to improve it through workshops and proper training.

Six factors exist in the case of parental engagement practices in the school and are statistically significant according to the principals' responses. According to the coordinating teachers ' responses, four out of six factors exist and are statistically significant. In contrast, sub-variable parenting, which means that institutions "help all families establish home environments to support children as students," is not practiced by educators. According to the teachers' results, the institutions do not provide training, information, or help to families. They do not provide training on developing a home environment for children that supports learning for parents. This result is valid for Pakistani parents because they have less time to attend workshops due to their low socioeconomic status.

Similarly, dimension volunteering, which means "recruiting and organizing parent support and help," is statistically insignificant and does not occur in institutions. Educators do not create flexible volunteering and school events, do not reduce barriers to parent participation, and do not recognize volunteers to encourage families and the community to be involved. The responses of principals and coordinating teachers about parental engagement practices averaged 3.7365 and 3.1146, respectively, and were statistically significant. The above results show that giving parents adequate training to improve their children's performance is essential. The research on parental engagement supports these findings, stating that parental role-building is vital in parents' involvement decisions (Hoover-Dempsey & Sandler; 1997, pp. 310–332). Parents are often more motivated to perform if they realize that collaboration is vital to their parental responsibilities. When parents believe they can positively impact their children's education and consider the children and institutions that want them to be engaged (Hoover-Dempsey & Sandler, 2005).

We tested the effects of educators' distributive leadership behavior and work experience as mediators and moderators on parental engagement strategies in school and parental engagement with their children at home to improve students' academic performance using the mediation and moderation models, respectively. The findings show that for 99.39349 percent of the population, teachers' parental engagement strategies at school seem to directly impact parental engagement at home. "Distributive Leadership Behaviors" has a 0.60651 percent indirect (mediation) influence on

parental engagement at home. The result shows that teachers' distributive leadership behaviors aren't working to mediate the relationship, which means that they aren't able to help parents. The educators' concept is not clear on the philosophy of leadership, cannot talk about future development, and cannot share exciting dreams for the future. Parents' predictions reveal that the educator's efforts to engage parents have a statistically significant impact on the parents, although leadership behavior is insufficient and must be improved. The main causes of the coordinating teachers' low level of distributive leadership behavior are pre-service and in-service poor training. When we ran a moderated mediation model, the educators' work experience played a statistically significant role in the parental engagement practices of the educators at school and their leadership behavior as perceived by parents. The effect was positive and statistically significant at -1 standard deviation of work experience (b =.0506, s.e. =.0229, p <.05). The educators' parental engagement practices in school were positive and significant at the mean of work experience (b =.1178, s.e. =.0182, p<.001). Educators' parental involvement practices were a significant positive predictor at + 1 SD of work experience (b =.1996, s.e. =.0276, p<.001). Nonetheless, the coefficients get more encouraging as we proceed from low to high experience levels. This result shows that experienced instructors may serve as productive coordinators.

Similarly, when parents' parental engagement at home regressed to educators' parental engagement practices in school, the work experience of educators at -1 standard deviation as moderators was insignificant at (b =.0115, s.e. =.0157, p >.10). The effect was insignificant at the mean of work experience (b = -.0194, s.e. =.0126, p >.10), but parental engagement practices of school educators were a significant predictor at +1 standard deviation of work experience (b = -.0569, s.e =.0192, p<.01). This finding suggests that the most experienced teachers may be valuable as coordinators. The work experience does not work at -1 standard deviation and on the work experience mean. Still, it best moderates educators' parental engagement practices and parental engagement with children at home at the +1 standard deviation work experience. This finding seems to be inconsistent with the everyday experience of human beings. Even the most experienced professional can carry out excellent strategies.

According to the parents' and students' responses, six factors of parental engagement in the home are statistically significant, indicating that parents are involved in their children's education at home. The regression result suggests that parental involvement significantly impacts students' outcomes. The result shows that one unit change in the parental engagement at home brings 55.911 unit changes in students' academic performance. This result means that if parents with proper skills give one hour to their children at home, the student's academic performance may improve by up to approximately fifty-six marks, which is an outstanding achievement.

These findings suggest that constant and appropriate training and workshops in schools could provide parents with the proper skills. This finding is consistent with previous research on parental involvement. According to Mapp (2003, pp. 35–65), a study on parents' perceptions of leadership and strategies for their participation in institutions highlights three essential aspects: (1) the institutional system should be perceived to encourage parents to attend school; (2) participation should be considered valuable property and a resource; and (3) the institution should connect with parents through emphasizing the students' education. The principal, teachers, and other staff members must greet parents warmly and be willing to engage them in the school's programs. Successful organizations also support and encourage others by the principal to participate in decision-making committees and events, effectively validating parents' aspirations to be involved in their children's education. According to Akbar, Younes, and Chishti (2017), parental engagement directly influenced 86.6% and had an indirect (mediational) influence of 13.39% on youths' school performance.

RECOMMENDATIONS

This study examined how high school principals and subordinate teachers used distributive leadership to include parents in their children's education to increase student academic performance. Teachers' views towards principals regarding leadership behavior at their institutions differed from principals' opinions. Similarly, parental involvement practices that inspire and prepare parents to assist their children with their schooling are only partially adopted. The system will fail to provide quality education if parents believe they are not being welcomed and cannot guide their children. Parents should be considered the third pillar of the education system, and ministries should enhance students' educational success. This research on Pakistani high school principals and teachers comes at a perfect time when the Pakistani education system needs to establish a more effective principal and teacher-centered professional strategic framework.

However, the finding may call into the legitimacy of a generally held assumption in federal and provincial education ministries and departments. Simply prescribing in-service training content without having a clear vision of parental engagement strategies, pedagogical concepts, and skills is sufficient to ensure a school's good performance. Educators must analyze their present strengths, construct well-designed parental participation programs, and then regularly evaluate such programs' performance.

This study has many theoretical and practical implications. It provided a unique conceptual model that added to the present understanding of the issue. As a result, this specific conceptual model serves as the foundation for future work. As a result, it has a long-term theoretical basis, and future researchers can use this unique model in their

studies worldwide. This research has some limitations. For example, we carried out this study from a Pakistani viewpoint. Hence, the findings cannot be applied to all developing countries. Future researchers should use a larger sample size and include more nations within the area for more reliable conclusions. A disadvantage of this study is that it only examined a small number of educational sectors, e.g., secondary school level. As a result, future researchers should try this method at different levels, like elementary and primary grades.

Statement of Data Availability
The authors will make the raw data supporting the results of this paper available without restriction.

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REFERENCES

Akbar, T., Younes, M., & Chishti, A. F. (2017). *Relationship between parental involvements and Students' Academic Achievement, A quantitative study*: A dissertation

Australian Institute of Health &Welfare. (2012). *Social and emotional wellbeing: Development of a Children's Headline Indicator,* Information Paper, Canberra Available: http://www.aihw.gov.au.

Baron, R., & Kenny, I. (1986). The moderator-mediator variable distinction in social psychological research: *Journal of Personality and Social Psychology*, (*51),* 1173-1182

Bronfenbrenner, U. (1979). *The ecology of Human development:* Cambridge, MA: Harvard University Press

Bronfenbrenner, U. (1986). Ecology of the family as a Context for human development: Research Perspectives, *Developmental Psychology*, 22(6), 723–742.

Chen, Y. H. (2007). Principals' *Distributed Leadership Behaviors and Their Impact on Student Achievement in Selected Elementary Schools in Texas:* A Dissertation Copland, M. A. (2003). Leadership of inquiry: building and sustaining capacity for schoo improvement. *Education Evaluation and Policy Analysis*, *25*(4), 375-395

Day, C., Harris, A., Hadfield, M., Tolley, H., & Beresford, J. (2000). *leading schools in times of change:* Buckingham, UK: Open University Press

Elmore, R. (2000). *Building a new structure for school leadership:*Washington, DC: The Albert Shanker Institute.

Epstein, J. (1995). School/family/community partnerships: Caring for the children we share. *The Phi Delta Kappan, 76*(9), 701-712

Emerson, L., Fear, J., Fox, S., & Sanders, E. (2012). *Parental engagement in learningand schooling:*Lessons from Research isport by the Australian Research Alliance for Children and Youth (ARACY) for the Family School and Community Partnerships

Bureau, Canberra.

Gronn, P. (2002a). Distributed leadership as a unit of analysis: *Leadership Quarterly, 13* (4), 423-452.

Hawkins, J. D., Catalano, R. F., Kosterman, R., Abbot, t R., & Hill, K. G. (1999). Preventing adolescent health-risk behaviors by strengthening protection during childhood: *Archives of Pediatrics & Adolescent Medicine*; 153: 226–234.

Harris, A. (2002). Effective leadership in schools facing challenging contexts: *School Leadership & Management, 22* (1), 15-26.

Hoover - Dempsey, K. V., Bassler, O. C., & Brissie, J. S. (1992). Explorations in parent-school relations: *Journal of Educational Research, 85, (5),* 287-294.

Hoover- Dempsey, K., & Sandler, H. (1997). Parental involvement in children's education: Why does it make a difference? Teachers College Record, (97), 310-332.

Hoover-Dempsey, K. V., &Sandler, H. M. (2005). *The Social Context of Parental Involvement:* A Path to Enhance Achievement. Institute of Education Sciences U.S Department of Education

Katzemeyer, M., & Moller, G.. (2001). *Awakening the sleeping giant:* Helping teachers develop as leaders. Thousand Oaks, CA: Corwin Press.

Kenny, D. A. (2012). *Mediation*; available on Davidakenny. net, (2012, April)

Kouzes, J. M., & Posner, B. Z. (1993). *Credibility: how leaders gain and lose it, why people demand it. San Francisco*: Jossey-Bass.

Kouzes, J. M., & Posner, B. Z. (1995). *The leadership challenge*: *How to get extraordinary things done in Organizations (2nd ed.).* San Francisco: Jossey-Bass.

Kouzes, J. M., & Posner, B. Z. (2002). The leadership practices inventory: Theory and evidence behind the five practices of exemplary leaders. Retrieved October 16, 2006 from, http://media.wiley.com/assets/61/06/lcjb_appendix.pdf

Kouzes, J. M., & Posner, B. Z. (2003). *The leadership practices inventory (LPI): Self instrument* (3rd ed.). San Francisco: Jossey - Bass.

Lambert. L. (2003). Shifting conceptions of leadership: Towards a redefinition of leadership for the twenty-first century. In West-Burnham, B. Davies & J. (Eds.). *Handbook of Educational Leadership and Management* (pp. 5-15).

Leithwood, K., Jantzi, D., & Steinbach, R. (1997*). Changing leadership for changing times* New York: Open University Press

Piaget, J. (1981). *Their relations during child development:* Palo Alto, CA: Annual Reviews.

Resnick, M. D., Harris, L. J., & Blum, R. W. (1997). The impact of caring and connectedness on adolescent health and well-being: *Journal of Paediatrics & Child Health*; 29 (S l), S3–S9.

Rieber, R. W., & Robinson, D. K. (Eds). (2004). *The essential Vygotsky*: New York: Kluwer Academic Plenum Publishers

Rouse, M. (2005). *Leadership practices:* Perceptions of principals and teachers in Sullivan Country. Unpublished doctoral dissertation, East Tennessee State University NJ: Prentice Hall.

Salinas, K. C., Epstein, J. L. & Sanders, M. G. (1997). Starting points: An inventory of present practices of school-family community partnerships. In Epstein, J. L., Coates, L., Salinas, K.C., Sanders, M.G. & B.S. Simon, B. S. *School, Family, and Community*

Partnerships: Your Handbook for Action (pp.122-125). Thousand Oaks, CA: Corwin Press.

Sheldon, S. B., & Epstein, J. L. (2005a). School programs of family and community involvement to support children's reading and literacy development across the grades: In J. Flood & P L. Anders (Eds.), Literacy development of students in urban schools (pp. 107–138). Newark, DE: International Reading Association.

Singh, K., et al. (1995). The effects of four components of parents' involvement on eighth-grade student achievement: Structural analysis of NELS: 88 data. *School Psychology Review, 24*(2), pp. 299-317

Spillane, J. P., Halverson, R., & Diamond, J. B. (2001). Investigating school leadership practice: A distributed perspective, *Educational Researcher, 3*(11), 23-28.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*: Cambridge, MA: Harvard University Pres

Woods, P. A., Bennett, N., Harvey, J. A., & Wise, C. (2004). Variability and dualities in distributed leadership: Findings from a systematic literature review, *Education Management Administration & Leadership, 32*(4), 439-457.

Yukl, G. A. (2008). How Leaders influence organizational effectiveness. *The Leadership Quarterly*, *19*, 708-722.