

## **Intrinsic Motivation and Academic Self-Efficacy as Mediation between Parental Involvement and Academic Achievement of Elementary Students**

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### **Abstract**

This study explored the role of academic self-efficacy and intrinsic motivation in mediating relationship of parental involvement with students' achievement at elementary level. Employing random sampling technique, a sample of 373 students; 183 boys and 190 girls was recruited from four public sector elementary schools of Multan city. A survey-based questionnaire measuring the research variables was administered to collect the data. Students' grades in Board's examination were used as achievement scores of the students. The results demonstrated significantly positive linkage of involvement of parents and students' achievement. Similarly, *intrinsic motivation and academic self-efficacy* were found to be *mediating the relationship between parental involvement and academic achievement* of students. These findings would be useful for the parents and school teachers in a way that could be helping in enhancing the students' performance by increasing parents' involvement in educational matters of children.

**Keywords:** Achievement, intrinsic motivation, parents' involvement, self-efficacy

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## **Introduction**

The thematic nexus of this paper consists of four areas i.e. the “*intrinsic motivation, academic self-efficacy, parental involvement and academic achievement of elementary school students*”. Each of the themes is unique in its respective perspective and has been addressed through the respective tool(s) described in the relevant (i.e. the methodology) section. However, the thematic description of the each is presented in this section as considered in this study.

## **Motivation and Intrinsic Motivation**

Individuals need reasons to work, to act and to behave in different situations. These reasons or factors are called motives and have an influence on the working and work performance of individuals, their actions and behaviors e.g. appreciation of parents encourage their children to exert good behaviors; and teachers’ encouragement promotes interest for learning among students and so on. The strength of such reasons and factors –the motives strongly influences the work performance, actions and behaviors of all individuals. The more the strength of reasons the more is their influence resulting in enhanced performance. In other words the strength of motive(s) specifies direction and level of interest for realizing the motive(s) or meeting the need(s); and the underlying phenomenon is termed as motivation.

By visioning from the views and suggestions of social scientists it is “*the psychological processes that cause the arousal, direction, and persistence of behavior*” (Mitchell, 1982, p.81). It energizes behavior and actions of individuals directing towards achievement of goal(s). It is a goal-directed behavior and is developed when one feels that his/her certain action or effort is useful for attainment of certain goal(s) or it satisfies one’s needs and wants.

Motivation and students’ learning are interrelated. It seems to be worthwhile in educational process as motivated students appear to be keener on learning. They are regular, take part in learning activities with interest and complete their homework timely. Motivation appears as one of the factors which enhance learning and learning achievement of students. It is based on “psychological processes that cause the arousal, direction and persistence of behavior” (Mitchell, 1982). It is the fundamental factor behind every human activity and /or experience. Motivation and learning are interrelated concepts and

the former appears to improve the later. Basically, it has two types i.e. “*intrinsic motivation and extrinsic motivation*” which are discussed in education. Prospectively, both types influence learning in different way (Standage, Duda, & Ntoumanis, 2005) because of their respective nature.

The intrinsic motivation is inner one and it comes from within of an individual due to internal aspirations and reward(s). It develops and strengthens one’s will for achievement and drives one’s behavior(s) & attitudes by developing such inclinations, interest, curiosity and resoluteness for improvement. Whereas, the extrinsic motivation is external one and it is externally driven phenomenon as external factors like appreciation, social status, fame and money etc. arouse it. However, in teaching learning process both types seem to be positively related to student’s achievement. It is generally observed, that the students who are highly motivated find teaching learning process more interesting and they are engaged more cognitively in accomplishing their learning tasks. They often take it as an “*Edutainment*” and enjoy in completing their learning activities. The assertion of Chen and Darst (2001) that through motivation “*a learning task that demands relatively high cognitive engagement is likely to be perceived as interesting and enjoyable regardless of the intensity of the physical involvement in the task demands*” (p.160) also endorses “*learning through edutainment*”.

The elementary school students are at developing stage of their age(s) and intrinsic motivation seems to be playing a significant role in shaping their lives by enhancing their learning and learning achievement. Apparently, it has positive effects on learning of elementary school students. It makes them self-regulated by engaging them in learning activities with preference and zest of work and overcoming the constraints (Deci & Ryan, 1985) hindering their studies. The higher level intrinsic motivation promotes more positive feelings among school students towards their course(s) of studies. “*It [intrinsic motivation] influences positively the grades obtained on the course, and so, students’ academic achievement*” (Cardoso, Ferreira, Abrantes & Seabra, 2017, p.65) at elementary level of education. Fan and Williams (2018) found intrinsic motivation and self-efficacy to be mediating the association of their perception about school environment and their achievement in mathematics. Also in reading it appeared to be positively related with achievements cores of students. Similarly, the study conducted by Erten (2014) linked intrinsic motivation of prospective teachers with their achievement.

Different studies conducted at different levels on linkage of intrinsic motivation with learning achievement affirmed it e.g. undergraduate level (Ayub, 2010; Tariq, Mubeen & Mahmood, 2011), teacher education and training – prospective teachers (Eymur, & Geban, 2011), elementary school level (Herges, Duffield, Martin, & Wageman, 2017), secondary school level education (Cardoso, Ferreira, Abrantes & Seabra, 2017). Similarly, some researchers addressed different aspects of intrinsic motivation, learning and learning performance and/or achievement of students. Amongst others, the studies conducted by different researchers (Tasgin & Coskun, 2018; Law, Elliot, & Murayama, 2012; Lee, McInerney, Liem, & Ortiga, 2010; Corpus, Gilbert & Hayenga, 2009; Afzal, Ali, Khan, & Hamid 2010; Ning & Downing, 2010; Mnyandu, 2001; Goldberg & Cornell, 1998) reported intrinsic motivation to be affirmatively linked to learning achievement of students. Even so, it appear as a prerequisite for academic performance & learning achievement (Masitsa, 2008); while both of the types of motivation seem to be to be affecting learning (Bear, Slaughter, Mantz, & Farley-Ripple, 2017) and achievement goals (Ayub, 2010) of students.

### **Academic Self-Efficacy**

It is one's belief about his or her own abilities with their effects which make one capable of functioning –to learn or exert desired behaviors (Bandura, 1997; Schunk & Pajares, 2002). It is one's opinion about what s/he can do (Bandura, 1995) instead of keeping in view his/her personality traits and/ or physical characteristics (Zimmerman & Cleary, 2006). It is one's belief in his/ her abilities in producing desired performance (Wigfield, Byrnes & Eccles, 2006). Hence, it is necessary for one's functioning (Lent, 2005) as it is seen in relationship with human activities and performance in a particular domain (Schunk & Pajares, 2002). Self-efficacy can help individuals in directing their actions for success in different domains and aspects of activities in life.

In the context of education, students with academic self-efficacy can cope with their learning problems in educational environments with confidence (Alegre, 2014) by overcoming their fears & anxiety and they demonstrate better learning performance (Zajacova, Lynch & Espenshade, 2005) in examinations. They can manage their learning difficulties and prepare for getting through the examinations in a better way. It is a descriptor of academic achievement (Duckworth, Peterson, Matthews, & Kelly, 2007; Bong, 2008) of students. The

researchers (Dullas, 2018; Köseoğlu, 2015; Alegre, 2014; Elmotaleb & Saha, 2013; Kohler, 2009; Miller & Brickman, 2004; Chemers, Hu, & Garcia, 2001; Zimmerman, 2000) acknowledged an affirmative linkage of “academic self-efficacy with academic performance” as the students with high level of self-efficacy appear to be more likely to study in longer [duration] session; they work with more effort and face academic challenges (Köseoğlu, 2015; Schunk & Zimmerman, 2006) successfully with confidence. Alike relationship was affirmed at all levels of education among Latino students even by using different techniques of measuring academic-self-efficacy and performance (Sanchez, Outley, Gonzalez, & Cascante, 2018) of the students. Even so, it exerted “*mediating effect of academic self-efficacy on the relationship between perceived academic climate and students' academic performance*” (Elmotaleb, & Saha, 2013, p.117) at undergraduate level in Egypt.

In modern times, some researchers examined relationship of academic-self-efficacy with academic performance of students who were studying in/through virtual/ online mode of education and found the former to be positively correlated with the later (Yukselturk, & Bulut, 2007; Joo, Lim, & Kim, 2013; Lynch, & Dembo, 2004; Kitsantas, & Chow, 2007). Observably, academic-self-efficacy affects performance of individuals in their respective areas of work and in education it appears as a remarkable influencer of academic achievement of students at all levels (Motlagh, Amrai, Yazdani, Abderahim & Souri, 2011) and all modes of education.

### **Parental Involvement**

There is a natural bonding of love and affection between parents and their children. Children are very nears and dears ones to parents. For parents their children are the only valued assets in their lives. Achievements of children bring happiness to parents whereas, the otherwise situation pains them. Therefore, parents are always concerned with their children and their lives particularly in adolescence. Obligations of parents in brought up of children; particularly in their socialization and education plays a crucial role in their development for later life (Bailey, 2017; Lewis-Antoine, 2012). Parents motivate and encourage their children (Gonzalez DeHass, Willems & Doan Holbein, 2005) to be engaged in learning activities at school(s) (Uslu, & Gizir, 2017) to make progress in their studies in the right direction (Ghazi, Ali, Shahzad, Khan, & Hukamdad

(2010); thus to improve their performance (Brock, Nishida, Chiong, Grimm, & Kaufman, 2008) and achieve good grades.

Better education and better brought up of children is the responsibility of parents (Walton, Yahiya & Gamal, 2014) as parental involvement in education and educational matters of children is remarkably acknowledged and appreciated in all societies and cultures. Hence, parents owe a key role which they have to play positively in educating their children (Epstein, Sanders, Simon, Salinas, Jansorn & Voorhis, 2002). Seemingly, parental involvement which is a challenging task develops motivation to learn among their children and it is closely associated with their learning and achievement (Cheung & Pomerantz, 2012); and it enhances their performance in studies (Bailey, 2017). Therefore, parents' involvement is one of the indispensable descriptors of student's accomplishment(s) in schools (Herell, 2011) with greater effects on it (Sheppard (2009) i.e. success in learning and achievement.

In this backdrop, parents' involvement is regarded as encouragingly positive and strongly linked with academic performance of students (Fan & Chen, 2001) at secondary level (Hussain, Javaid, Parveen, & Iqbal, 2018) of education. Generally viewing, the involvement of family [members] in education and educational matters of children is seen in association with their improved results at levels of school education (Stewart, 2008) with consistency through different levels (Naheed, Dahar, & Lateef, 2016; Wilder, 2014). As parents often appear to be seriously concerned with success of their children in studies –grades and reports (Bailey, 2017; Uslu, & Gizir, 2017) of schools; hence, such involvement is viewed to be essential for facilitating learning of their children. It necessitates close liaison between school and parents have to on which the student's achievement is seen to be dependent (Vijaya, Vijaya, & Rajeshkumar, 2016). Such interest of parents in educating their children or their involvement has a direct relationship with achievement of their children –the students (Smith, 2011). Such increased involvement of parents leaves positive effects on student's achievement (Naheed, Dahar & Lateef, 2016; Obico, 2015; Wilder, 2014). Similarly, it demonstrates a significantly affirmative link with education and educational performance of students (Amponsah, Milledzi, Ampofo, & Gyambrah, 2018) at senior secondary level.

### **Academic Achievement**

Generally, the outcomes of the education of a student at a certain level are determined in percentage and grades including letter grade(s) or cumulative grade point average –CGPA. It demonstrates the performance of a student in his/her studies or educational endeavor; and it is referred to as learning performance, learning achievement, academic performance or academic achievement in literature and also in society. The percentage, grades or CGPA determine success and level of success of a student at a certain level of education or schooling. It reflects aptitude and educational and/or professional direction a student has in his/her future life. Therefore, it is most concerning and focal point of the stakeholders i.e. students, teachers, parents, educational administrators, curriculum designers & developers and policy makers who are involved in education of students at various levels.

One can view academic performance or academic achievement of students through its different dimensions or orientations i.e. to some of the people may regard it as development of accepted or pro-social behaviors among students; to others it is adjustment in new situations; whereas, many may see it in quantitative way and consider percentage and grades in numeric and adhere more importance to increased achievement scores. Hence, academic achievement is seen as a multi-aspect educational construct that is demonstrated through values, skills, attitudes and behaviors (Hijazi, & Naqvi, 2006) which a student learns as a part of curricula and exerts [in different situations] along with securing scores in their respective examinations conducted at the end of a term or a semester (Tinto, 1993). Better academic achievement is seen through higher examination scores or greater percentage or CGPA. This perspective of academic achievement is considered in this study. It is assessed at different levels and for different purposes. For instance, class tests and mid-term examinations are generally conducted for the purpose of improving the situation; end-term or final term or final examinations evaluate mastery of students in studied courses or content; and their results indicate subject-wise as well as cumulative scores and grades. Such tests and examinations formally confer certificate, degree or diploma for which the students took examination if the students meet minimum pre-determined criteria (Elliot, 2007) and so on.

As different stakeholders are concerned with education and academic achievement of students; therefore, different factors are often seen to be associated with these stakeholders (either directly or indirectly) to be effecting on such achievement of students. Amongst others, parents' or family related factors; school –teachers and teaching, principals (administrators) related factors; and personal factors (intentions, inclinations, aptitude, intelligence etc.) of students; and culture related factors appear to be more significant factors which affect learning and learning achievement of students (Fan, & Williams, 2010; Georgiou, 2007; Diaz, 2003). In some situations these factors leave such effect effects collectively (Diaz, 2003). However, students' personal preferences, individual characteristics and inclinations like intrinsic motivation and academic-self-efficacy appear to be linked with their academic achievement (Anderson, Benjamin & Fuss, 1994) besides parental concerns and their involvement in such achievement and achievement process.

It is worth mentioning here that this study “*explored the role of intrinsic motivation and academic-self-efficacy in mediation of the relationship of/ between parental involvement with/and academic achievement of elementary level students*” by considering the nature and scope of these constructs as described in the above section.

### **Objectives**

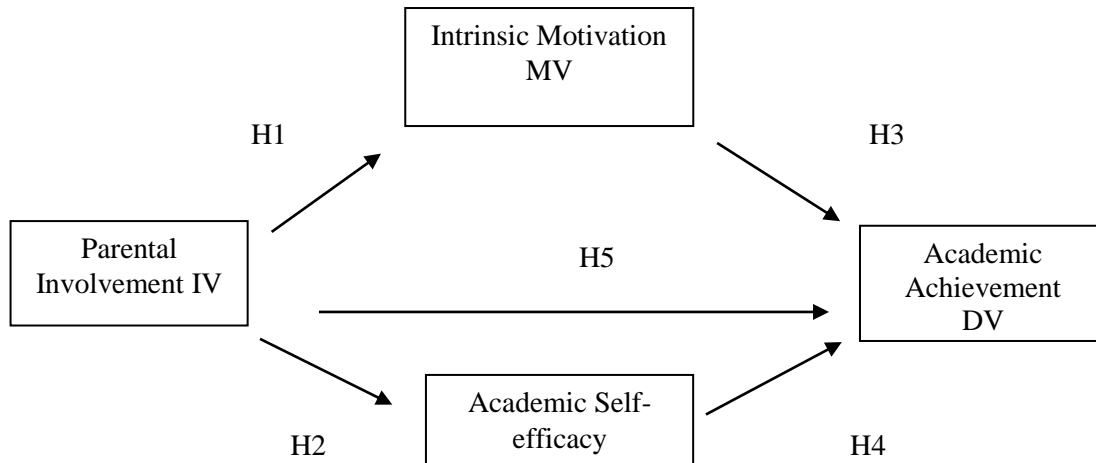
This study was undertaken to (1) assess relationship among the constructs of parental involvement, academic achievement, intrinsic motivation and academic self-efficacy of elementarylevel students; (2) explore the mediating role of intrinsic motivation in predicting relationship between parental involvement and academic achievement of elementarylevel students; and (3) evaluate the mediating role of academic self-efficacy in relationship between parental involvement and academic achievement of elementary level students.

### **The Hypothesized Framework**

Getting insight from different studies during the entire process of literature review; particularly, that of Cardoso, Ferreira, Abrantes, and Seabra (2017) the researchers proposed the following conceptual model of the study.



Figure 1

*Hypothesized Framework of the Study***Method****Participants**

The study was conducted on elementary level school students (N = 373) recruited from four public high schools through random sampling technique. Among them 183 were males and 190 were females aged 11-14 years. Of the sample of 373, 175 (46.92%) of the participants were from rural area and 198 (53.08%) were from Urban area; 191 (21.16%) while 182 (48.80%) of the participants were of joint family system and 191 (51.20%) of participants were resident of nuclear family system.

**Instruments of the Study**

The researchers used the following instruments for this study.

**Parental Involvement Scale**

This study used Parental Involvement Scale (PSI) developed by Voydanoff and Donnelly (1999). It is a 9-items scale responding on 5-point Likert scale that measures the parents' commitments in educating their children at school. It estimates parents' involvement in matters of children by getting their responses quarterly basis during the previous year. When using this scale, the

researchers asked the respondents, “Did your parents provided your required/or desired during the last 3 months, 6 months or a year”. The subjects answered merely by responding to each of the items on the scale according to the level their parents had been involved and concerned for their academic things during the selected time period. The responses on the scale according to their respective scale-value(s) were summed up to get total scores of each of the items. The reliability of this scale for the current sample was found at alpha coefficient of .79.

### **Academic Self-efficacy Scale**

The researchers adapted this scale from the “*Motivated Strategies for Learning Questionnaire (MSLQ)*” (Pintrich & Groot (1990). It is a seven points’ Likert scale that measures the perception of students about their abilities for accomplishment of a certain task in a specific way. Its subscale comprises of 9-items or statements which rate their abilities for completing class activities and belief in achievement. The students can get 29 as minimum and 60 as maximum score on this scale. The higher mean scores represented the high level of academic self-efficacy among students. Alpha reliability coefficient of the scale was found .83.

### **Intrinsic Motivation Scale**

This study used intrinsic motivation subscale of “*Elementary School Motivation Scale (ESMS)*” (Guay, Chanal, Ratelle, Marsh, Larose & Boivin, 2010). It is a nine-item on five points’ likert scale and is used for measuring the level of intrinsic motivation through willful behaviors regarding reading, writing and mathematics. The respondents were explained on how to complete the scale with examples before they recorded their final responses. The scale was administered at school(s) by the teachers.

### **Academic Achievement**

The academic achievement of elementary level respondents obtained through percentage of their results. The researchers collected it from office record and examination gazette on a form designed for the purpose.

## Procedure

Institutional permission and informed consent of the respondents were taken prior to the collection of data. Researchers developed a complete set of guidelines to be given to the students about how to respond on the items in group setting during the class time. A booklet containing all questionnaires along with demographic information sheet was administered to the students. Data collected on a booklet comprising the measures of “*academic achievement, parental involvement and academic self-efficacy*” was analyzed by computing correlations, Regression, and mediation effect through path analyses on Smart-PLS confidentiality of the data was assured to the participants.

## Results

**Table 1**

*Correlation Matrix among Intrinsic Motivation, Academic Self-Efficacy, Parental Involvement and Academic Achievement of Elementary Level Students*

No	Variables	Mean	SD	2	3	4
1	Parental involvement	31.26	5.62	.35**	.26*	.33**
2	Academic achievement	69.77	8.92	1	.40**	.44**
3	Academic self-efficacy	48.34	9.43		1	.26*
4	Intrinsic motivation	30.05	7.94			1

\* $p < 0.05$ , \*\* $p < 0.001$  ( $N = 373$ )

The table 1 reflects the SD, mean and correlations of all study variables. Correlation analyses indicate the significant relationships among all variables. Findings suggest that “parental involvement” is affirmatively and significantly correlated with “intrinsic motivation, academic self-efficacy and academic achievement” of elementary level students. The results further reveal that the former two constructs also appear to be correlated with academic achievement significantly positive.

**Table 2**

*Standardized “Coefficients” and “t-Values” from Path Analysis of the Trans-Contextual Model*

Hypothesized Paths	Path Coefficients	t-Statistics
Parental involvement → academic achievement	.231	4.18**
Parental involvement → intrinsic motivation	.217	3.74**
Intrinsic motivation → academic achievement	.263	5.16**
Parental involvement → academic self-efficacy	.271	6.01**
Academic self-efficacy → academic achievement	.289	6.55**

\*p<0.01, \*\*p< 0.001

The table 2 demonstrates path coefficients and t-statistics for the hypothesized paths as suggested in model. It is evident from the findings that the significant t-statistics that proposed the significant paths existing between “criterion variable –parental involvement and dependent variable –academic achievement”. Regression analysis also shows the significant effects of “academic self-efficacy and intrinsic motivation on academic achievement” of elementary level students.

**Table 3**

*Mediation from Academic-Self-Efficacy and Intrinsic Motivation on the Relation between Parental Involvement and Academic Achievement*

Paths	B <sub>A</sub>	SE <sub>A</sub>	B <sub>B</sub>	SE <sub>B</sub>	Sobel Tests	P
PIIM → AC →	.053	.013	.277	.076	2.030	0.02*
PI → ASE → AC	.142	.029	.237	.120	2.204	0.00**

\*p>0.01, Note; P1: “Parental Involvement”, IM: Intrinsic Motivation”,

AC: “Academic Achievement”, ASE: “Academic Self-Efficacy”

The table 3 determines the significant beta coefficients for the hypothesized paths. Results imply that “intrinsic motivation and academic self-efficacy have significantly mediated the relationship of parental involvement with academic achievement”.

## Discussion

This study demonstrated remarkable findings in its scope and nature. These findings would be useful for parents, students and teachers particularly and other stakeholders generally.

The study depicted significant affirmative relationship of “parental involvement” with “intrinsic motivation”, “academic self-efficacy” and “academic achievement” of elementary level students (table 1). Hence,  $H_{01}$  is rejected. The results further reveal that the former two constructs appear to be correlated with “academic achievement” significantly positive. Alike relationship was affirmed at all levels of education among Latino students even by using different techniques of measuring academic-self-efficacy and performance (Sanchez, Outley, Gonzalez & Cascante, 2018) of the students. Even so, it exerted “*mediating effect of academic self-efficacy on the relationship between perceived academic climate and students' academic performance*” (Elmotaleb, & Saha, 2013) p.117) at undergraduate level in Egypt. Some other studies conducted by different researchers (Tasgin & Coskun, 2018; Law, Elliot & Murayama, 2012; Afzal, Ali, Khan, & Hamid, 2010; Lee, McInerney, Liem, & Ortiga, 2010; Ning, & Downing, 2010; Corpus, Gilbert, & Hayenga, 2009; Mnyandu, 2001; Goldberg & Cornell, 1998) reported intrinsic motivation affirmatively linked with learning performance of students. The former also appears as a prerequisite for academic performance & learning achievement (Masitsa, 2008); while both of the types of motivation seem to be affecting learning (Bear, Slaughter, Mantz, & Farley-Ripple, 2017) and achievement goals (Ayub, 2010) of students.

It is evident from the findings that the significant t-statistics that proposed the significant paths existing between “criterion variable –parental involvement” and “dependent variable –academic achievement”. Regression analysis also shows the significant effects of “academic self-efficacy” and “intrinsic motivation” on “academic achievement” of elementary level students (table 2). Therefore,  $H_{02}$  is rejected. It appear to be aligned with the results of some previous studies (Bailey, 2017; Naheed, Dahar, & Lateef, 2016; Vijaya, Vijaya, & Rajeshkumar, 2016; 2015; Wilder, 2014; Cheung & Pomerantz, 2012; Gonzalez-DeHass et al., 2005) which affirmed such relationship. Similarly, parental involvement was found to be significantly positive and strongly associated with academic performance of students (Fan & Chen, 2001) at secondary level

(Hussain, Javaid, Parveen & Iqbal, 2018) of education. Parental involvement necessitates close liaison between school and parents have to on which the student's achievement is seen to be dependent (Vijaya, Vijaya, & Rajeshkumar, 2016). Such interest of parents in educating their children or their involvement has a direct relationship with achievement of their children –the students (Smith, 2011). Such increased involvement of parents leaves positive effects on student's achievement (Naheed, Dahar & Lateef, 2016; Obico, 2015; Wilder, 2014). Similarly, it demonstrates a significantly affirmative link with education and educational performance of students (Amponsah, Milledzi, Ampofo, & Gyamrah, 2018) at senior secondary level.

The “intrinsic motivation and academic self-efficacy” have significantly mediated the relationship of “parental involvement” with “academic achievement” of students at elementary level (table 3). It is supported by some of the previous researchers (Dullas, 2018; Köseoğlu, 2015; Alegre, 2014; Elmotaleb, & Saha, 2013; Kohler, 2009; Miller & Brickman, 2004; Chemers, Hu, & Garcia, 2001; Zimmerman, 2000) who reported a affirmative linkage between “academic self-efficacy and academic performance” of students as the students with higher level of academic-self-efficacy appear to be more likely to study in/for longer session/duration; they work with more effort and face academic challenges (Köseoğlu, 2015; Schunk & Zimmerman, 2006) successfully with confidence.

### **Conclusion(s)**

In nutshell, the study demonstrates a significant affirmative relationship of “*parental involvement with intrinsic motivation, academic self-efficacy and academic achievement*” of elementary level students (table 1). The results further reveal that the former two constructs appear to be correlated with *academic achievement* significantly positive. It also suggests significant paths existing between “criterion variable –parental involvement” and dependent variable i.e. academic achievement”. It shows significant effects of “*academic self-efficacy and intrinsic motivation on academic achievement*” of elementary level students (table 2). The “*intrinsic motivation and academic self-efficacy*” have significantly mediated the “*relationship of parental involvement with academic achievement*” of elementary level students (table 3).

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