

Gender Differences in Motivation And Academic Achievement: A Study Of the University Students of KP, Pakistan

Sadaf Naz*

Syed Afzal Shah[†]

Anjum Qayum[‡]

Vol. V, No. I (Winter 2020)

Page: 67 – 75

p-ISSN: 2616-955X

e-ISSN: 2663-7030

ISSN-L: 2616-955X



Abstract

This descriptive survey research investigated the motivation (intrinsic and extrinsic) from a gender point of view and established a link of motivation (extrinsic and intrinsic) with students' academic achievement. From two public sector universities of Khyber Pakhtunkhwa, 162 students were selected through the use of the technique of stratified random sampling. For measuring the students' motivation (intrinsic and extrinsic), a scale developed by Lepper et al. (2005) was used. In order to analyze the collected data, the correlation coefficient and t-test were used. Results showed that Male students are more extrinsically motivated. A significant gender difference in the aspect of Easy work and academic outcomes exists. Furthermore, students' educational attainment is significantly affected by both intrinsic and extrinsic motivation.

Key Words: Extrinsic Motivation, Gender, Intrinsic Motivation, University Students

Introduction

Motivation has been associated with the cognitive, biological as well as social factors to affect the behavior of humans. This has various explanations as it is a diverse phenomenon. From a psychological perspective, motivation is considered as an energizer of behaviour (Reber & Reber, 2001) and works as energy to direct one's behavior towards a target (Eymur & Geban, 2011). It means that motivation is an inner urge that gives direction, stimulation, and supports goal-oriented actions (Ryan et al., 2000).

Motivation has been categorized into two main forms i.e. Intrinsic and Extrinsic motivation. Intrinsic motivation is related to the inner force of behaviour, such as want or desire. People who are intrinsically motivated do things because of the innate interest involved aiming at self-satisfaction and fulfilment (Ali et al., 2011, Sendogan and Iksan, 2012). In intrinsic motivation, the place of behaviour is almost completely internal. This category of motivation has also been connected with personal enjoyment along with internal satisfaction (Vallerand & Ratelle, 2002).

Conversely, extrinsic motivation comes out of factors such as family expectations and pressures, educational environment and teachers, and workplace responsibilities. Motivation within the environment which possibly affect one's eagerness towards achievement are extrinsic factors. Extrinsic motivation refers to engage in activities that are a means to an end rather than an end in themselves (Schunk, Meece & Pintrich 2014). Individuals who are extrinsically motivated when their participation in certain things is aimed at attaining desirable outcomes such as material rewards, praise, or avoiding punishment (Schunk, Meece, and Pintrich, 2014). Both intrinsic and extrinsic forms of motivation have been associated with educational environments. Both forms of motivation are influenced by different factors such as family environment, cultural level or social settings and educational mindsets (Ginsburg and Bronstein, 1993). Motivation has been identified as an important player in scholastic accomplishment among students at diverse points of the educational ladder. According to Uguroglu

* Assistant Professor, Department of Education, Hazara University Mansehra, KP, Pakistan.

[†] Assistant Professor, , Department of Education, The University of Haripur, KP, Pakistan.

Email: afzal_kakakhel@yahoo.com

[‡] Lecturer, Department of Education, Hazara University Mansehra, KP, Pakistan.

[and Walbert \(1979\)](#) (as cited in [Ayub, 2010](#)), motivation significantly contribute to student achievement (see also [Chow and Yong, 2013](#)). Extrinsic and intrinsic motivation can work as a driving force that affects students' overall performance ([Behzadi, 2014](#)). Both types of motivation can play either a positive or negative role in terms of academic interest and achievement among students. However, both these forms of motivation are not essentially independent or exclusive. In many cases, both forms of motivation are overlapping and are often interdependent.

Research shows that students having towering academic motivation have a propensity to have higher academic attainment as well as a low level of dropout ([Blank, 1997](#)). Different studies investigated the role of motivation for students' performance ([Cheng, et al., 2011](#), [Goodman et al, 2011](#), [ErdemKeklik, & Keklik, 2013](#)). Other studies have also strongly associated motivation and academic performance and success (Eymur and Geban, 2011; [Fortier, Green, Nelson, Martin, Marsh, 2001](#); [Guay, 1995](#); Johnson, 1996; [McInerney, 2001](#); Sandra, 2002).

Males and females often have different motivation levels in terms of different educational programs and setups. Pomerantz et al (2002) indicate that females often set higher standards in the classroom and tend to critically evaluate their own performance. Researchers have consistently found that boys often show lesser motivation to study in the absence of more material interests or incentives. In contrast, females have higher motivation which is often associated with the tendency among them to please adults, including parents and teachers ([Pomerantz, Altermatt, and Saxon, 2002](#)).

In gender perspective, intrinsic motivation is greatly found among girls as compared to boys ([Mecca and Holt, 1993](#); [Anderman & Anderman, \(1999\)](#)). [Boggiano \(1991\)](#) argues that girls were more extrinsically motivated and were prejudiced by teacher feedback. Interestingly, however, some studies also show that there is no gender difference in terms of motivational orientations towards academic achievement. For instance, [Hagborg \(1995\)](#) has indicated that both boys and girls do not show any unique differentiation in the intensity of their intrinsic motivation. The same study has also revealed that the academic achievement of both boys and girls has been positively influenced by intrinsic motivation.

The discussion so far emphasizes the significance of motivation in terms of students' academic achievement, orientation and interest. The gender focus on this issue is also interesting and inconclusive. The issue has not been much explored in the Pakistani context where gender has otherwise been an important and often conflicting issue in education. This indicates the significance of this particular study.

Objectives of the study

1. To explore the differences between motivation (intrinsic and extrinsic) among male and female students
2. To establish a link of motivation (extrinsic and intrinsic) with students' academic achievement

The following section presents the hypotheses of this study.

Hypotheses of The Study

1. Intrinsic and extrinsic motivation is the same among girls and boys.
2. The relationship of intrinsic motivation with academic achievement does not exist.
3. The relationship of extrinsic motivation with academic achievement does not exist.

Review of related literature

Motivation gives strength that stimulates an individual to achieve certain goals and to remain engaged in a task. Motivation is the key factor that gives students' strength to achieve something, energize students' action and focus towards a higher goal including learning ([Ormrod, 2000](#); [Pintrich & Macher, 2004](#)) and it is a predictor of students' achievement ([Beal & Stevens, 2007](#); [Skaalvik&Skaalvik, 2006](#); [Zhu & Leung, 2011](#)). Across childhood through adolescence motivation plays a significant role in education and scholastic achievement ([Elliot & Dweck, 2005](#)). Self-Determination Theory suggests motivation as ranges from autonomous to controlled ([Ryan and Deci, 2017](#)), that distinguish extrinsic motivation to covers a wide range of controlled behavior and intrinsic motivation, that

is related to autonomous behaviors ([Ryan et al., 1985](#)). Ryan and [Deci. \(2000\)](#) mentioned three kinds of motivation namely extrinsic, intrinsic and motivation.

Intrinsic motivation

Intrinsic motivation is described as performing any work, action and activity for once own self-satisfaction rather than for achieving rewards from others ([Xie, Debacker, & Ferguson, 2006](#)). Individuals having intrinsic motivation accomplish an activity for their enjoyment and pleasure ([Olsson, 2008](#)). According to [Guay et al., \(2010\)](#) intrinsic motivation is characterized by an innate pleasure, interest and joy that comes from within and enables an individual find pleasure and to enjoy in one's work and continue one's interest in the effort for a longer time period As being entirely autonomous, intrinsic motivation is the most favorable and long-lasting category of motivation as compared to extrinsic motivation ([Gao, 2008; Remedios, & Lieberman, 2008](#)).

In academic setting, students having intrinsic motivation, complete tasks for accepting challenge, for self-satisfaction, and joy rather than any incentives or external pressures. Such students often feel more confident, satisfied, and take an interest in any task. Students with this motivation feel pride in his learning and subject and accept challenges in learning. Hence intrinsic motivation emphasizes self-regulation, self-commitment and self-determination without feeling any pressure ([Brophy, 2010](#)). Intrinsic motivation is of utmost importance because an intrinsically motivated student finds ways and means to master skills and content required for learning ([Cavallo, Rozman, Blinkenstaff & Walker, 2003](#)). Intrinsic motivation is more sustainable and within one's control that helps a student to keep going and retain information more easily. These students are enthusiastic and good learners, take on the responsibility of gaining and acquiring knowledge and are ever ready to try newer methods of learning and are not scared of failure in their attempts ([Ainley, 2004; Dev, 1997](#)).

Extrinsic motivation

Extrinsic motivation is characterized by an external environment like good grades, rewards, a bright promising career, parental approval, and appreciation by others. These rewards hold charm for specific time but beyond that or in their absence, the individual doesn't feel the urge to learn ([DeLong & Winter, 2002](#)). Students who are extrinsically motivated are dependent on various factors in the external environment like they learns because they want to get good grades, want to shape their career and also wants appreciation and applauded by others for their learning. According to [Ardura and Pérez-Bitrián \(2018\)](#) extrinsic motivation is associated with future preferences and it is the best predictor of future decisions.

Motivation and Academic achievement

Previous achievement and motivation influence future achievement. Motivation and academic performance are connected ([Villafañe et al. 2016](#)) and are considered critical to performance ([Mujtaba et al., 2018](#)) as both play an important function in students' educational achievement ([Cerasoli et al., 2014](#)). Previous studies have found at different levels that a positive link continues amid the intrinsic motivation and academic achievement. For example, a significant association was found between scholastic performance and intrinsic motivation among university students in some studies ([Ning and Downing, 2010](#)). Similarly, [Afzal, Ali, Khan, and Hamid \(2010\)](#) conducted research in Pakistan also reported that learning and academic performance is promoted by intrinsic motivation.

Motivation and Gender

Students' motivational beliefs in different subjects are guides of students' feelings, actions and thinking that lead them towards success in learning ([Clayton, Blumberg & Auld, 2010](#)). Most of the previous researchers found that female students are more motivated towards the achievement of desirable learning goals as compared to male students. But from previously conducted researches it was found that the levels of intrinsic motivation of students vary on different subjects, towards various subjects' different genders have different higher intrinsic and extrinsic motivation. No significant gender difference in higher motivation was found in all subject areas.

In comparing gender differences in different subjects at the university level, a study conducted by [Narayanan, Rajasekaran, and Iyyappan \(2007\)](#) found that in learning English, girls have greater intrinsic motivation compared

to boys. Similarly, another research study reported higher intrinsic motivation in physical education among females as compare to males (Shang, 1998). Schatt (2011) found that female students perform better in Instrumental musical practice in the subject of music that significantly correlated with their intrinsic motivational beliefs than males. According to Conti, Collins, and Picariello, (2001) and Burger, Dahlgren, and MacDonald (2006), male students are inclined towards higher intrinsic motivation in competition and gamble than their female counterparts.

Method

This is a quantitative, descriptive type of research.

Population of the study

The population of the study comprised all students studying in the B.A (Hons) programs in two Pakistani universities namely Hazara University Mansehra and The University of Haripur in the Khyber Pakhtunkhwa province.

Sample of the study

The sample of the study comprised 162 (81 boys and 81 girls) students studying in the B.A (Hons) programs in two Pakistani universities in the Khyber Pakhtunkhwa province.

Research instrument

For measuring students' motivation (intrinsic and extrinsic) motivation a scale developed by Lepper et al. (2005) was used. Items of the scale comprised of areas related to intrinsic as well as extrinsic motivation. 17 items represented intrinsic motivation including students' personal curiosity-driven engagement, inclinations to master material independently and preference for challenging work. 16 items in the scale were used to measure extrinsic motivation. The items focused on indicators such as dependence on the teacher, focus on pleasing authority, and preference for easy school work. As an average, these items formed an internally consistent (0.90 & 0.83) composite scale of intrinsic and extrinsic motivation.

Data collection and ethical considerations

Data were collected personally by the researcher. As part of the ethical considerations data were collected after seeking informed consent of the participants. Participants were ensured of anonymity and confidentiality. Participation was voluntary and questionnaires were filled during a planned time.

Data analysis

Since t-test is used for measuring the differences between the variables, therefore, for exploring gender difference in intrinsic along with extrinsic motivation, the t-test was used. Similarly, the correlation coefficient is used to explore the relationship between two or more variable, therefore, to explore the relationship among these variables Pearson correlation was used. The previous exam results of the participants were collected from their departments as a measure of academic achievement.

Results

Table 1. Comparison of males and females students in intrinsic motivation

Gender	N	Mean (M)	Std. Dev	t value	p value
Male	81	64.54	9.788		
Female	81	63.44	9.726	0.509	0.612

Table 1 indicates the difference between mean scores of boys and girls. The value of t is 0.509, which is less than the tabulated value (1.96) at 0.05 level. This indicates no noticeable gender differences in intrinsic motivation.

Table 2. Significance gender differences in the sub variables of intrinsic motivation

Variables	Gender	Mean	S.D	t	p
<i>Challenge</i>	Female	22.5	4.289	.281	.779
	Male	22.34	3.533		
<i>Curiosity</i>	Female	24.07	3.797	.852	.397
	Male	23.27	4.712		
<i>Independent mastery</i>	Female	17.88	3.084	.072	.943
	Male	17.83	3.06		

Table 2 indicates the obtained value of t is .281, which indicate no significant gender difference in terms of Challenge. In terms of *Curiosity*, the t -value (.852) shows no significant gender difference. No significant difference in gender (.072) was found in the aspect of Independent mastery.

Table 3. Comparison of males and females students in extrinsic motivation

Gender	N	Mean (M)	Std. Dev	t value	p value
Female	81	36.68	6.702	-2.613	.011
Male	81	41.10	8.494		

Table 3 indicates the calculated value of t is -2.613, indicating a significant gender difference in terms of extrinsic motivation. Extrinsic motivation is greater among Male students as compared to female students.

Table 4. Gender difference in the sub variables of extrinsic motivation

Variables	Gender	Mean	S.D	t	P
<i>Easy work</i>	Female	15.98	3.791	-2.95	.004
	Male	18.56	4.123		
<i>Pleasing teacher</i>	Female	8.88	2.900	-1.17	.244
	Male	9.66	3.119		
<i>Dependence on teacher</i>	Female	11.83	2.828	-1.46	.147
	Male	12.88	3.607		

In table 4 the value of t (-2.95) points toward a noteworthy gender distinction in the aspect of Easy work. In the sub variable, pleasing teacher, the calculated value of t -1.17 shows an insignificant gender difference. The calculated value of t (1.46) indicates an insignificant gender difference in the factor of dependence on the teacher.

Table 5. Comparison of males and females students in academic achievement

Gender	N	Mean (M)	Std. Dev	t value	p value
Female	81	68.17	8.270	2.07	.04
Male	81	64.73	6.667		

Table 5 indicates the value of t (2.07) that indicates a significant gender difference in academic outcomes. Result indicates that female students' academic achievement is better than male students.

Table 6. Relationship of intrinsic motivation with academic achievement

Variable	r	P
intrinsic motivation	0.787**	0.000

p < 0.05

Table 6 indicates the value of ($r = .787$, $p < 0.05$) shows a significant association between students' intrinsic motivation and academic achievement. Result indicates that high scores in intrinsic motivation lead to high academic achievement.

Table 7. Correlation between extrinsic and academic achievement

Variable	R	P
extrinsic motivation	0.447**	.000

p > 0.05

Table 7 indicates that there is a significant correlation ($r = 0.447$, $p > 0.05$) linking students' extrinsic motivation with academic success. The positive correlation coefficient indicates that extrinsically motivated students showed higher academic achievement.

Discussion

This study aimed at exploring possible gender differences in kinds of motivation and their impact on university students' academic achievement. Previous research shows that intrinsically motivated students are efficient in their performance than extrinsically motivated students. The extrinsically motivated students show a short term record of better performance but it could not be sustained for a longer time. Extrinsically motivated students might get good marks or perform well in one semester but their performance did not remain persistent in the next semester. The internally motivated students kept up their tempo of performance on the same level for their own interests and for their own learning. Such students seemed more likely to be ready for hard work to show better academic performance. The study finding shows noteworthy gender distinction in extrinsic motivation while no significant gender differences were found in the intrinsic motivation. Extrinsic motivation was greater among male students as compared to female students. Results indicate that female students' academic achievement was better than male. The study's first hypothesis that is "Intrinsic and extrinsic motivation is same among girls' and boys' was rejected. These findings are aligned with previously conducted studies. A study conducted by [Mecca and Holt \(1993\)](#) found that girls are likely to have more intrinsic motivation than boys. These findings also get support from the findings of Nadia (2010) and [Mubeen, Saeed, and Arif, \(2013\)](#) who found females as more intrinsically motivated and males as more extrinsically motivated.

There was a significant positive link of students' intrinsic motivation with their educational success and a considerable bond between students' intrinsic motivation and their educational success was found. The second and third hypothesis of the study is accepted. Previously conducted studies also indicated that better results are achieved by the intrinsically motivated students as they are less dependent on extrinsic stimuli of motivation in addition to their positive learning self-concept ([Gottfried, 1985](#); [Stipek, 1998](#)). Similarly, the study findings are also consistent with the findings of [Chee, Pino and Smith \(2005\)](#) who found that in female students, the academic ethics and academic achievement are high.

Conclusion

Both forms of motivation have been associated with an impact on students' academic achievement. The study reveals that gender and motivation types are associated with the sense that male students seem to respond more positively to extrinsic motivation while female students tend to have more intrinsic motivations. This study is helpful for university teachers to apply different motivational strategies during the course of instructions. The parents may be involved in different programs to motivate their children intrinsically and improve their academic performance. The study also implies that there is further scope for studying motivation and the relevance and effectiveness of its different forms on students' academic achievement and interest. The degree of association of different forms of motivation with gender also needs further research.

References

- Afzal, H. Ali, I. Khan, A. & Hamid, K. (2010). A Study of University Students' Motivation and Its Relationship with Their Academic Performance. *International Journal of Business and Management*, 5(4), 80-88.
- Ainley, M. (2004). Connecting with learning: Motivation, affect and cognition in interest process. *Educational Psychology Review*, 18(4), 391-405.
- Ainley, M. (2004). Connecting with learning: Motivation, affect and cognition in interest process. *Educational Psychology Review*, 18(4), 391-405.
- Ali, Z., I. A. Tatlah, & Saeed, M. (2011). Motivation and Students Behavior: A Tertiary Level Study. *International Journal of Psychology and Counseling*, 3(2), 29-32.
- Anderman, L. H. (1999). Classroom goal orientation, school belonging and social goals as predictors of students' positive and negative affect following the transition to middle school. *Journal of Research and Development in Education*, 32, 89-103.
- Ardura, D. & Pérez-Bitrián (2018). The effect of motivation on the choice of chemistry in secondary schools: adaptation and validation of the Science Motivation Questionnaire II to Spanish students. *Chemistry Education Research and Practice*, 19(3), 905-918.
- Ayub, N. (2010). Effect of intrinsic and extrinsic motivation on academic performance. *Pakistan Business Review*, 27(1), 363-372.
- Beal, C. R., & Stevens, R. H. (2007). Student motivation and performance in scientific problem solving simulations. In R. Luckin, K. R. Koedinger, & J. Greer (Eds.), *Artificial intelligence in education: Building technology rich learning contexts that work* (pp. 539-541). Amsterdam: IOS Press.
- Behzadi, A. (2014). The Effects of Teaching English on University Students' Motivation in Iran. *International Journal of English and Education*, 3(2), 52-64.
- Blank, W. (1997). Authentic instruction. In W.E. Blank & S. Harwell (Eds.), *Promising practices for connecting high school to the real world* (pp. 15-21). Tampa, FL: University of South Florida. (ERIC Document Reproduction Service No.ED 407 586).
- Boggiano, A. K., Main, D. S., & Katz, P. (1991). Mastery motivation in boys and girls: The role of intrinsic versus extrinsic motivation. *Sex Roles*, 25(9/10), 511-520.
- Brophy (2010), Brophy, J. (2010). *Motivating Students to Learn*. New York: Routledge
- Burger, T. D., Dahlgren, D., & MacDonald, C. D. (2006). College Students and Gambling: An Examination of Gender Differences in Motivation for Participation. *College Student Journal*, 40, 704-714.
- Cavallo, A. M. L., Rozman, M., Blinkenstaff, J., & Walker, N. (2003). Students' learning approaches, reasoning abilities, motivational goals and epistemological beliefs in differing college science courses. *Journal of College Science Teaching*, 33, 18-23.
- Cerasoli, C. P., Nicklin, J. M. & Ford, M. T. (2014). Intrinsic motivation and extrinsic incentives jointly predict performance: A 40-year meta-analysis. *Psychological Bulletin*, 140(4), 980-1008.
- Chee, K. H., N.W. Pino, & W.L. Smith. 2005. Gender differences in the academic ethic and academic achievement. *College Student Journal* 39 (3), 604-19.
- Cheng, P., Lin, M., & Su, C.K. (2011). Attitudes and Motivations of Students Taking Professional Certificate Examinations. *Social Behavior and Personality*, 39(10), 1303-1314.
- Chow, S.J. & Yong, B.C.S. (2013). Secondary school students' motivation and achievement in combines science. *US-China Education Review*, 3(4), 213-228.
- Conti, R., Collins, M. A., & Picariello, M. L. (2001). The impact of competition on intrinsic motivation and creativity: Considering gender, gender segregation and gender role orientation. *Personality and Individual Differences*, 31(8), 1273-1289.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Press.
- DeLong, M., & Winter, D. (2002). *Strategies for motivating students. Learning to teach and teaching to learn mathematics*. Resources for professional development (pp.159-168). Washington, D. C.: Mathematical Association of America

- Dev, P. C. (1997). Intrinsic Motivation and Academic Achievement: What Does Their Relationship Imply for the Classroom Teacher?, *Remedial & Special Education*, 18(1), 12-19.
- Elliot, A. J., & Dweck, C. S. (2005). Competence and Motivation: Competence as the Core of Achievement Motivation. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (p. 3–12). New York: Guilford Press.
- ErdemKeklik, D. & Keklik, I. (2013). Motivation and learning strategies as predictors of high school students' math achievement, *Cukurova University Faculty of Education Journal*, 42(1), 96-109.
- Fortier, M.S., Vallerand, R.J. & Guay, F. (1995). Academic motivation and school performance: Toward a structural Model. *Contemporary Educational Psychology*, 20, 257-274.
- Gao, X. (2008). Shifting motivational discourses among mainland Chinese students in an English medium tertiary institution in Hong Kong: a longitudinal Inquiry. *Studies in Higher Education*, 33(5), 599–614.
- Ginsburg, G. S., & Bronstein, P. (1993). Family factors related to children's intrinsic/ extrinsic motivational orientation and academic performance. *Child Development*, 64, 1461-1474.
- Goodman, S. Jaffer, S. Keresztesi, M. Mamdani, F. Mokgatle, D. Musariri, M. Pires, J. & Schlechter, A. (2011). An Investigation of the Relationship between Students' Motivation and Academic Performance as Mediated by Effort. *South Africa Journal of Psychology*, 41(3), 373-385.
- Gottfried, A.W. (1985). Measures of socioeconomic status in child development research: Data and recommendations. *Merrill-Palmer Quarterly*, 31, 85–92.
- Guay, F., Chanal, J., Ratelle, C. F., Marsh, H. W., Larose, S., & Boivin, M. (2010). Intrinsic identified, and controlled types of motivation for school subjects in young elementary school children. *British Journal of Educational Psychology*, 80(4), 711–735.
- Hagborg, W. J., (1995), "Gender and Motivational Orientation Among High School Students", Education Resources Information Center, ED415225, .316-330.
- Harter, S., (1981), "A New Self-Report Scale of Intrinsic Versus Extrinsic Orientation in the Classroom: Motivational and Informational Components", *Developmental Psychology*, 17, 300-312.
- Lepper, M. R., Corpus, J. H., & Iyengar. S. S. (2005). Intrinsic and extrinsic motivational orientations in the classroom: Age differences and academic correlates. *Journal of Educational Psychology*, 97, 184-196.
- Lyer, R .D. (2017). Uncovering Students' Motivation for Learning Science: Gender Differences in Mumbai Global Business and Management Research: *An International Journal*, 9(3), 17-30.
- McInerney, D. M., Yeung, A. S., & McInerney, V. (2001). Cross-cultural validation of the Inventory of School Motivation (ISM): Motivation Orientations of Navajo and Anglo students. *Journal of Applied Measurement*, 2(2), 135-53.
- Meece, J.L. & Holt, K. (1993). A pattern analysis of students' achievement goals. *Journal of Educational Psychology*, 85, 582-590.
- Mubeen, S., Saeed, S., & Arif, M. H. (2013). An Investigation the Gender Difference into the Status of Intrinsic Motivation towards Science Learning Among Intermediate Science Students. *Journal of Humanities and Social Science*, 10(6), 81-85.
- Mujtaba, T., Sheldrake, R., Reiss, M. J. & Simon, S. (2018). Students' science attitudes, beliefs, and context: associations with science and chemistry aspirations, *International Journal of Science Education*, 40(6), 644-667.
- Narayanan, R., Rajasekaran N. N., & Iyyappan, S. (2007). Do female students have higher motivation than male students in learning of English at the tertiary level (Eric Document Reproduction Service No. ED496970)
- Ning, H. K., & Downing, K. (2010). The reciprocal relationship between motivation and self-regulation: A longitudinal study on academic performance. *Learning and Individual Differences*, 20(6), 682-686.
- Olsson, F. M. (2008). *New Developments in the Psychology of Motivation*. Nova Science Publishers, Inc.: New York.
- Ormrod, J. E. (2000). *Educational Psychology* (3rd ed.). Upper Saddle t-test, NJ: Merrill/Prentice Hall.
- Pintrich, P. R., & Maehr, M. L. (Eds.). (2004). *Advances in motivation and achievement: Motivating students, improving schools*. (Vol. 13). Oxford, England: JAI, An Imprint of Elsevier Science.

- Pomerantz, E. M., Altermatt, E. R., & Saxon, J. L. (2002). Making the grade but feeling distressed: Gender differences in academic performance and internal distress. *Journal of Educational Psychology, 94*, 396 – 404.
- Reber, E., & Reber, A. S (2001). *The penguin dictionary of psychology* (3rd ed.) London: Penguin
- Remedios, R., & Lieberman, D. A. (2008). I liked your course because you taught me well: the influence of grades, workload, expectations and goals on students' evaluations of teaching. *British Educational Research Journal, 34*(1), 91-115.
- Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. Guilford Press.
- Schatt, M. D. (2011). Achievement motivation and the adolescent musician: A synthesis of the literature. *Research and Issues in Music Education, 9*(1), 1-9.
- Schunk, D. H., Meece, J. L., & Pintrich, P. R. (2014). *Motivation in education: theory, research, and applications fourth edition*. Boston: Pearson
- Sendogan, V. & Iksan, Z. H. (2012). 'Students' Learning Styles and Intrinsic Motivation in Learning Mathematics. *Asian Social Science, 8*(16), 17-23.
- Shang, I-Wei. (1998). *An Analysis of the Relationships between Goal Perspectives, Perceived Learning Environment, and Intrinsic Motivation by Skill Levels and Gender in Adolescent Boys and Girls in Taiwan, Republic of China*. Applied Image Inc.: New York.
- Skaalvik, E. M., & Skaalvik, S. (2006). Self-concept and self-efficacy in mathematics: Relation with mathematics motivation and achievement. *The concept of self in education, family and sports*, 51-74.
- Stipek, D. (1998). *Motivation to Learn: From Theory to Practice*. Boston: Allyn and Bacon.
- Uguroglu, M. E. & Walberg, H.J. (1979). Motivation and achievement: A quantitative synthesis. *American Educational Research Journal, 16*, 375-389.
- Vallerand, R. J., & Ratelle, C. F. (2002). Intrinsic and extrinsic motivation: A hierarchical model. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 37– 64). Rochester, NY: University of Rochester Press.
- Xie, K., Debacker, T. K., & Ferguson, C. (2006). Extending the Traditional Classroom through Online Discussion: The Role of Student Motivation. *J. Educational Computing Research, 34*(1), 67-89.
- Zhu, Y., & Leung, F. K. S. (2011). Motivation and achievement: Is there an East Asian model? *International Journal of Science and Mathematics Education, 9*(5), 1189-1212.