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RESEARCH ARTICLE

AN ASSESSMENT OF JIMMA ZONE GRADE 10 STUDENTS' EXTRINSIC MOTIVATIONS TOWARDS MATHEMATICS

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ABSTRACT

The main purpose of the study was to assess factors affecting students' extrinsic motivation and to predict ways of improving students' academic achievement in Mathematics of grade ten students of Jimma Zone, Oromia Regional State. Attempts made to identify the major factors that contribute to students' academic motivations. To this end, a descriptive quantitative survey design was employed. Thus, for this study 10 high schools were selected out of 32 by using purposive sampling techniques. While 21 sections out of 106 sections of grade 10 students studying in the 1st semester of academic year 2015 G.C were selected by systematic sampling technique from the sampled schools. While 1387 students included by using random sampling technique and 10 principals, 40 teachers and 40 PTA were selected by using systematic and purposive sampling technique respectively The data obtained through document analysis, questionnaire from principals, teachers and students and FGD held with PTA or community member. The data gathered through questionnaire were analysed using different statistical tools: percentage, mean score, one way ANOVA and Spearman rank order correlation coefficient. The data gathered thorough document analysis showed that, the academic motivation rate in high School of the study area showed a decreasing tendency. The findings of the study revealed that, low academic motivation rate was a function of in-school and out-of-school factors. Among in-school factors, inadequate supply of school facilities, large class size, lack of appropriate educational guidance and counselling services, lack of teachers support for learners in providing extra tutorial programs, frequent absenteeism of students, student lack of interest toward learning, and poor academic back ground of learners were the major identified factor in the study area. Concerning the out-of-school factors school distance from students home were the major identified factors contribute for students' academic extrinsic motivation toward mathematics. Generally, the current findings implied that students' academic motivation of high schools was the commutative effects of both in school and out-of- school factors. Thus changing the current trends of academic motivation problem the study implies that there is a need for an urgent improvement from both in-schools and out-of-schools environment. Based on the findings and conclusion, improving the supply of school facilities, improving pupils', parents and community awareness, providing full-time guidance and counselling services, and establishing high schools at suiTable location; subsidizing educational materials for pupils were suggested as recommendations.

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INTRODUCTION

Mathematics now dominates almost every field of one's activities. In this age of science and Technology, it has permeated through the human life in such a way that, it has now become every man's everyday concern. Mathematics disciplines the mind, systematizes ones thought and reasoning. The subject has also rich potentialities of affording true enjoyment to its students.

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Mathematics is an important subject in school curriculum. It is more closely related to one's daily life as compared to other subjects. Except one's mother tongue there is no other subject which is more closely related to one's daily life as mathematics. Mathematics is considered to be the father of all sciences. Napoleon remarked that: "*The progress and improvement of mathematics is linked to the prosperity of the state*" (SabitaMahanta *et al.*, 2015). Although there is no standard definition of the term motivation, in general it refers to a learned predisposition or tendency on the part of an individual to respond positively or negatively to some object, situation, concept or another person. In assessing Mathematics

performance and potential of students, motivation towards Mathematics and Mathematics learning are frequently cited as factors contributing to success. The importance of motivation in learning has been widely recognized. It is believed that motivation provides the primary impetus to initiate learning and later the driving force to sustain the learning (Guilloteaux and Dörnyei, 2008; Wang, 2008). Some further claimed that motivation is central to student learning (Mankin, Boone, Flores, and Willyard, 2004). It is believed that motivation is among the most powerful determinants of students' success or failure in school (Ryan and Connell, 1989; Sternberg and Wagner, 1994). Means, Jonassen and Dwyer (1997) cited studies showing that motivation accounted for 16% to 38% of the variations in overall student achievement.

Consistently, in mathematics education, motivation has also been regarded as one of the most important issues (Walker and Guzdial, 1999). Hannula (2006) further highlighted that in order to understand students' various behaviours in mathematics classrooms, including those unexpected, it was important to increase our understanding of what motivation was and how it was regulated. Nevertheless, it appears difficult to synthesize research findings on motivation across studies due to the inconsistency in the ways in which motivation has been defined and measured (Harlen and Deakin, 2002). For instance, a study by Kleinginna (1981) found a total of 102 statements defining or criticizing the concept of motivation from a variety of sources, and these statements were further classified into nine categories based on the phenomena or theoretical issues emphasized with a tenth category containing the sceptical statements. The inconsistency on the definition of motivation, as suggested by Holden (1990), is related to its unobservable nature.

In particular, one's motivation can be judged only through one's behaviour and surroundings in which one is active. In psychology, according to Geen (1995), motivation addresses the initiation, intensity, and persistence of human behaviour; in other words, motivation could be viewed as the power that helps a person initiate a persistent behaviour with a certain degree of intensity in order to achieve a long-term goal (Li, Davis and Lomax, 2008). Similarly, Franken (1994) suggested three dimensions of human behaviour to exemplify the notion of motivation, which are arousal, direction, and persistence. There are also researchers who proposed other components in behaviour related to motivation, such as continuity (Hebb, 1955), energization (Deci and Ryan, 1985), and performance (Simms, 1998). To elaborate the complex nature of motivation, a vast number of motivational theories have been developed since motivation began to be studied as a discipline separate from learning in the 1930s.

Early motivation researchers primarily focused on the factors which stimulated behaviour. Many theories at that time were established based on the idea of homeostatic balance. Clark Hull's drive reduction theory was one of such theories, which interprets motivation as the desire to reduce drives to a state of neutrality (Model, 2005). With the emergence of cognitive science in the 1950s, motivation researchers shifted their interests to the direction of behaviour (Ngaosuvan, 2004). One important cognitive motivation theory is Victor Vroom's expectancy-value theory that views motivation as a product of the perceived probability of success and the value of that success (Demmrich, 2005). From the 1970s, voluntarism which heavily emphasizes on the self has started to dominate motivational research. Deci and Ryan's self-determination theory is such a representative and influential one developed in this context. The theory begins with the assumption that people are active organisms with inborn tendencies toward psychological growth and development. It suggests that humans have three innate needs: competence, autonomy, and relatedness. Regarding the history of motivational studies, Weiner (1990) commented that the field has demonstrated great vigour and movement, while there were still many uncharted areas in front of motivational researchers. In Ethiopia, greater emphasis is being placed on Industrial and Technological development. As a result students are being encouraged to take up science related subjects. One subject that cut across all the sciences is mathematics. Today, mathematical methods pervade literally every field of human endeavor and play a fundamental role in economic development of a country.

Statement of the problem

From the background of the study, mathematics is an elective science subject offered at the upper secondary level. Mathematic is one of the compulsory subjects to be taken in middle class education together with other science subjects. However, Mathematics is one of the most important branches in science and had been regarded as a difficult subject for young students by mathematics teachers, researchers, and educators (HalukOzmen, 2004). Some students cannot score good results in mathematic because they are lack of motivations that will pushed them in learning Mathematics. The study will focus on the student's extrinsic motivations in learning Mathematics. Aspects of students' motivation to learn can be classified either intrinsic or extrinsic (Etwistle *et al*., 1974). The applications of motivation in all teaching and learning processes are significant because they create life-long learning process towards an individual. Both intrinsic and extrinsic motivational factors influence students in their learning but we can promote better extrinsic motivation to students when we understand what are the extrinsic factors that motivating them.

This study focuses on extrinsic motivational factors contributing in learning mathematic such as facilities, parent teachers association, teacher, family, peer-group, school environment in secondary school in Oromia region,Jimma Zone. The main purpose of this study is to reveal the extrinsic motivational factors that help students in achieving good academic results in Mathematics. Findings of National Learning Assessment Carried out every four years show that student performance in Mathematics is very low. According to this assessment, in Grade 10 the analysis of variance showed a statistically significant difference in mathematics score and SNNP (36%) and Amhara (36%) scored highest. Gambella (25.4%) and Afar (28.2%) achieved lowest scores and the mean differences were statistically significant with the highest achieving ones and Oromia scored (35%). Surprisingly, no region scored the minimum requirement (50%) set by MOE, in 1994 E.C policy, to be attained in

Mathematics(ZewduGebrekidan, 2010). Based on the oromia region's result it is not difficult to infer the Jimma zone grade 10 students' performance in mathematics is very low. This study was carried out to predict the extrinsic motivation of Jimma Zone selected High School students in Mathematics.

The study will be expected to answer the following question:

- What are the relationship between facilities, PTA, teachers and environment that motivates students in learning Mathematics?
- What are factors affecting students' extrinsic motivation toward mathematics?
- What roles teachers, PTA and school management can play to motivate students to learn Mathematics?

MATERIALS AND METHODS

This part of the paper deals with research design, source of data, sample population and sampling techniques, instruments of data collection, procedures of data collection, and methods of data analysis.

Research Design: This study employed descriptive survey method.

Sources of Data

Primary sources: High school principals', teachers, selected students, P.T.A.

Secondary sources: Annual educational Statistical abstracts of MOE and OEB Annual education Statistical Abstracts, Jimma Zone Educational Office Statistical group and grade 10 results were used as secondary source of the study.

Sample Population and Sampling techniques

The target population of the study were grade 10 mathematics teachers, principals and the current members of P.T.A of high Schools. The study used purposive and Systematic sampling techniques. Purposive sampling technique was used to select a representative secondary school from the North, South, West and East of Jimma zone. As a result, 10 secondary schools were selected. Systematic sampling techniques were used to select a number of sections in each secondary school. As a result, 21 (from a total of 106) sections were selected. That is 1387 (from a total of 6890) students were selected. Furthermore, from sample high schools, all school principal, all grade 10 mathematics teachers, 40 P.T.A members were intended to include in the study. Because the researcher believes that they are the right sources of information on the factors affecting student's motivation of high schools of Jimma zone than other.

Instrument of data collection

In order to obtain necessary data from different groups of respondents, the following data gathering instruments were employed; Namely: questionnaires for principals, teachers and students and focus group discussion (FGD) for P.T.A and document analysis were made to collect relevant information from sample population.

Procedures of data collection

The first measure to be taken to ward collection of data, using instrument was prepared for the purpose, it is essential to make contact with Jimma Zone Education Office, to get permission and support, to carry out the research work. After that the WEO and school director, were well informed, about the purpose of the study and they offer the necessary support and facilitate the necessary conditions for the data gathering activities. Then, the researcher was arranging the schedule and place with the respondents. In line with the schedule set for this purpose the questionnaire were distributed, after the necessary orientation were given at their school. And finally the questionnaires were collected from the respondents; only three days were allotted for each school to collect the necessary information.

Method of Data Analysis

After the necessary data was collected from the concerned groups of respondents, the raw data gathered was tallied, coded and organized carefully according to their similarities of issues addressed in questionnaires. Moreover, the quantitative data were analysed quantitatively using statistical methods such as percentage, weighted mean, one way ANOVA and Spearman rank order correlation coefficient. Thus, for analysis of quantitative data obtained through closed-ended questionnaires; the respondents were categorized in to three groups; so as to identify significant mean scores differences among three groups of respondents' responses. Accordingly, one way ANOVA was also used to see whether there were significant differences among principals, students and teachers respondents' responses given on contribution of in school factors for students' academic motivations of high school in the study area and significance level was considered at level confidence interval of 0.05. The Spearman rank order correlation coefficient was employed to see whether there was the association between teachers and students respondents' responses. Furthermore, FGD were also conducted together with PTA (community members) in the sample school. The qualitative data obtained through FGD were analysed qualitatively and triangulated with quantitative data in order to substantiate the quantitative data obtained using open ended questionnaire. At the end the data were presented using descriptive and inferential statistics by using the latest version of SPSS (version 20.0).

Data from the Questionnaire

Socio-demographic Characteristics of Respondents

A total of 10 principals were participated in the study and all of them were males. With regard to their age, 6 (60%) and 4 (40%) of principals were found between the age interval of 21-30 and 31-40 years respectively. From 40 teachers included in the study, 37(92.5%) and 3(7.5%) were males and females respectively. Regarding to teachers age, 21(52.5%), 9(22.5%), 6(15%) and 4(10%) of them were reported that they found at the age interval of 21-30, 31-40, 41-50 and 51 and above years respectively. From these discussions one can easily understand that the majority of respondents are found at younger age. So that they are matured enough to give relevant information

regarding the factors contribute for students' extrinsic motivation toward mathematics in the selected high schools.

schools environment for students learning to maximize the number of students who are academically motivated toward

Table 1. Characteristics of Jimma Zone respondents in 2015 E.C

No	Items	Response of Respondents					
		Principals		Teachers		Students	
		No	%	No	%	No	%
1	Sex: male	10	100	37	92.5	639	46
	Female	-	-	3	7.5	748	56
2	Age:15-16 Years	-	-	-	-	679	49
	17-18 Years	-	-	-	-	555	40
	19-20 Years	-	-	-	-	125	9
	21 and above Years	-	-	-	-	28	2
	< 20 Years	-		-	-	-	-
	21-30 Years	6	60	21	52.5	-	-
	31-40 Years	4	40	9	22.5	-	-
	41-50 Years	-	-	6	15	-	-
	51 and above Years	-	-	4	10	-	-
3	Marital status: Married	-	-	-	-	83	6
	Unmarried	-	-	-	-	1304	94
	Divorced	-	-	-	-	-	-

Table 2. Jimma Zone Teachers Respondents by Educational level and years of services in 2015 G.C

No	Items	Response of teachers	
		No	%
1	Level of educational qualification		
	College diploma	-	-
	BA/BSC/BED	40	100
	MA/MSC/MED	-	-
	others	-	-
2	Years of service as teacher ≤5 years	6	15
	6-10 years	14	35
	11-15 years	8	20
	16-20 years	2	5
	21 and above years	10	25

Nevertheless, 1387 students involved in the study, out of those 639(46%) and 748(56%) males and females respectively. As to students age, 679(49%), 555(40%), 125(9%) and 28(2%) were found between the age interval 15-16, 17-18, 19-20, 21 and above years old respectively. The majority of students' respondents were found at matured age so as to provide relevant information about the major causes of extrinsic academic motivation grade 10 students towards mathematics of high schools in the study area. With regard to students marital status 83(6%) and 1304(94%) were married and unmarried respectively. As indicated in (Table 3) with respects to teachers' level of educational qualification, 40(100%) of teachers reported that they are degree holders. This indicated that all teachers reported that they are degree holders in teaching, and meet the minimum qualification standard for secondary schools (grade 10). From this one can easily understand that the majority of respondents' meet the minimum standards. So that the respondents level of educational qualification is not among the factors that aggravate students' extrinsic motivation of high school in the study area. As regarded to years of working experiences of teachers 34(85%) of the teachers respondents are served six or above years. Moreover, 6(15%) teachers have served five or less than five years and 10(25%) of teachers have serve 21and above years. Thus, if we hypothesized that the more qualified and experienced teachers have better knowledge regarding to factors contributed for students motivation of high schools , and could be able to create conductive, attractive and save learning mathematics in their schooling than their counter parts. Therefore, teachers' workings experiences are not among the major factors contribute for students' motivation in schools. As it can be seen from item number 1 in (Table 4) concerning to parents' occupational status, 958 (69%), 166(12%), 83(6%), 180(13%) of students respondents reported that farmers, daily labors, merchants and professional/Civil servants respectively. As regard to the students parental education levels, 430(31%), 638(46%), 125(9%) and 194(14%) of students respondents replied that, illiterate, primary education and secondary education respectively. This discussion shows that the majority of students' respondents were coming from farmers and illiterate parental background. Therefore, these situations may have association with student's motivation of high schools in the study area. Thus, various research findings reported that parental educational and occupational status has direct association with student's motivation in schooling system. Moreover, students from better educated parents and better earning occupation are highly motivated than their counter parts.

As can be observed from the Table 5 as to teachers attitude and interest toward teaching and how they choice teaching profession by their own interest, 27(67.5%) and 13(32.5%) of the teachers replied yes and no respectively. From this one can understand that the majority of teachers' respondents were have positive attitudes and good interest towards their teaching profession as a results this situation is not have an impact on

student motivation of high schools in the study area. Moreover, the question asked to identify how teachers satisfied in teaching; accordingly 25 (62.5%) and 15(37.5%) of teachers answered yes and no respectively.

With regard to teachers' attitudes toward teaching profession the question: teaching is an interesting profession was presented to teachers. Accordingly, 32 (80%) and 8(20%) of teachers answered that, by saying yes and no respectively.

Table 3. Jimma Zone Parents' Educational and Occupational Background in 2015 G.C

No	Items	Response	
		No	%
1	Parental occupation:		
	Farmers	958	69
	Daily labors	166	12
	Merchants	83	6
	Professionals/Civil servants	180	13
	Other	-	-
2	Parental level of education Illiterate/do not read or write	638	46
	Primary education(1-8)	430	31
	Secondary education(9-12)	125	9
	College diploma and above	194	14

Table 4. Jimma Zone Teachers' attitude and interest to ward teaching in 2015 G.C

No	Items	Response	
		No	%
1	Do you join teaching professional by your own choice?		
	• Yes	27	67.5
	• No	13	32.5
2	Are you satisfied in your profession?		
	• Yes	25	62.5
	• No	15	37.5
3	Teaching is an interesting profession.		
	• Yes	32	80
	• No	8	20

Table 5. Jimma Zone grade 10 Students' responses in 2015 G.C

No	Items	Response	
		No	%
1	Distance you travel from your home to reach school:		
	▪ ≤ 1 hours	930	67
	▪ 1-4 hours	291	21
	▪ 5 and above hours	166	12
2	Do your parents encourage/offer help for schooling?		
	▪ Yes	1207	87
	▪ No	180	13
3	Do you have TV at your home?		
	▪ Yes	342	24.7
	▪ No	1045	75.3
4	How often do help your parents in domestic work		
	▪ Always	624	45
	▪ Some times	638	46
	▪ Rarely	111	8
	▪ Never	14	1
5	How you study in group?		
	▪ Always	283	20.4
	▪ Some times	492	35.5
	▪ Not at all	612	44.1
6	How many days do you absent from school in a month		
	▪ 1-3 days	749	54
	▪ 4-6 days	541	39
	▪ 7 and above days	69	5
	▪ Never	28	2
7	Mathematics score out of 100% in the 1st semester		
	▪ ≤ 65	717	51.7
	▪ 66-80	402	28.9
	▪ ≥ 81	268	19.4
8	Who is most responsible to improve your performance and to motivate you?		
	▪ Teacher	790	56.9
	▪ Student	388	27.9
	▪ School principals	148	10.6
	▪ Family (society)	61	4.6

From these discussions one can deduce that the majority of teachers' respondents have good satisfaction towards their teaching profession as a result this situation has no an impact on student motivation of high schools in the study area. Students were asked to give their responses to distance by estimating the distance between schools and their home and then the average time they do travel to reach school from their home. Accordingly, 930(67%), 291(21%) and 166(12%) of them reported that they are traveling less than one hours, one to four hours, and five and above hours respectively. The same students were asked to identify the extent of their parental support for their schooling by saying yes or no, accordingly, 1207(87%) and 180(13%) of the students respondents agreed, by saying yes and no respectively. From this it is possible to deduce that schools distance from peoples home has less association with students' motivation of high schools,but lack of parental encouragements and helps for their children's schooling has no relationship with students' motivation of high schools in the study area. In addition, students were asked in order to identify the extent to which they involved and offer support from their parents in domestic tasks at home corresponding to the item number 3. About 624(45%), 638(46%), 111(8%) and 14(1%) of respondents agreed that they get support from their parents always, sometimes, rarely and never respectively.

Majority of pupils replied that they involved in house hold tasks. As a result the excessive involvement of pupils in house hold tasks has an association with students' motivation of high schools in the study area. This support the idea of (Stromquist, 1997) which said young girls in less developed countries shoulder various responsibility performed (household chores). In the same manner, students were asked in order to identify the extent to which they study in group mathematics corresponding to the item number 3. Accordingly, 283(20.4%), 492(35.5%) and 612(44.1%) of respondents agreed that, always, sometimes and Not at all respectively. From this one can easily understand that the majority of students are not study in group which has an association with students' motivation of high schools in the study area. In line with this, in order to identify the contribution of students regular absenteeism from schooling to students' motivation from high schools in the study area. Students were asked for how many days do they absent from their schooling within a month; accordingly 749(54%),541(39%), 69(5%), 28(2%) and of respondents replied, 1-3 days, 4-6 days, 7and above days and not at all respectively. This shows that the majority of students respondents were absent from schooling at least one to three and even above three days per month. This revealed that the majority of students were regularly absent from school for one to three and even above days. Thus, it could be safe to conclude that, the more the pupils regularly absent from schools, the more the classes they lose and the poorer in their academic achievements and then the more the chance this situation may contribute for students not motivate in their schooling in the study area.

Table 6. Jimma Zone Respondents' views on influences of schools facilities and educational materials in 2015 G.C

Item no	Factors	Respondents	N	Mean score ±SD	P-value
1	In adequacy of library service	Principals	10	3.62 ±0.759	.000*
		Students	1387	3.47 ±1.094	
		Teachers	40	2.66 ±1.195	
		Total	1437	3.13 ±1.166	
2	In adequacy of reference books	Principals	10	2.88 ±1.086	.793
		Students	1387	3.13 ±1.431	
		Teachers	40	3.00 ±1.414	
		Total	1437	3.04 ±1.386	
3	In adequacy of laboratory service (Teaching aid)	Principals	10	3.09 ±1.220	.003*
		Students	1387	3.31 ±1.260	
		Teachers	40	2.76 ±1.162	
		Total	1437	3.04 ±1.237	
4	In adequacy of laboratory equipment's	Principals	10	3.47 ±1.187	.104
		Students	1387	3.03 ±1.374	
		Teachers	40	2.87 ±1.306	
		Total	1437	3.01 ±1.333	
5	Absence of pedagogical center	Principals	10	2.44 ±1.356	.067
		Students	1387	2.73 ±1.401	
		Teachers	40	2.30 ±1.139	
		Total	1437	2.50 ±1.296	
6	Shortage of classroom	Principals	10	2.69 ±1.327	.001*
		Students	1387	2.98 ±1.495	
		Teachers	40	2.28 ±1.248	
		Total	1437	2.64 ±1.405	
7	Shortage of text books	Principals	10	1.34 ±.459	.000*
		Students	1387	1.99 ±.856	
		Teachers	40	1.63 ±.600	
		Total	1437	1.76 ±.748	
8	Shortage of desks and chair	Principals	10	3.32 ±1.171	.366
		Students	1387	3.21 ±1.195	
		Teachers	40	3.09 ±1.251	
		Total	1437	3.17 ±1.219	

In Table 6 item no.7, students were asked in order to identify the extent of their Mathematics score out of 100 in the 1st semester. Accordingly, 717(51.7%), 402(28.9%) and 268(19.4%) of respondents score $\leq$ 65, 66-80 and $\geq$ 81 respectively. From this one can easily understand that the

majority of students score ≤ 65, which has an association with students' motivation of high schools in the study area. Table 6 item no.8 shows that 56.9% of the respondent agreed that the most responsible to motivate student is teacher, 27.9% of respondent believe that the most responsible motivate student is student themselves, 10.6% and 4.6% of respondent agreed that school principal and family (all society) are equally responsible to motivate students. This shows that increasing the performance and motivation of the students toward Mathematics is the contribution of all the teachers, students, school principals, families (society) and other bodies related to Education sector.

the study area. Accordingly, some 21 in schools factors have been selected and incorporated in the questionnaires and then the three groups (principals, teachers, students) of the respondents were asked to indicate their opinions regarding to the extent of the influence of these factors on pupils not to motivate of high school in the study area. For this purpose the researcher has used different scales that represent the extent of the contribution of each items to pupils schools motivation (These scales were: 1= very low, 2= low, 3= moderate, 4= high, 5= very high). Since there is no one single factor contributes for students not to motivate in their schooling, it is the outcome of the combined effects of various factors.

Table 7. Jimma Zone Respondents Views on Impact of Curriculum, large-class size and Schools Location/Distance in 2015 G.C

Item no	Factors	Respondents	N	Mean score ± SD	P-value
1	Irrelevance of curriculum	Principals	10	1.68 ± .583	.000*
		Students	1387	2.56 ± .655	
		Teachers	40	1.99 ± 1.023	
		Total	1437	2.23 ± 1.142	
2	Large class size	Principals	10	3.47 ± .928	.000*
		Students	1387	3.40 ± 1.359	
		Teachers	40	2.59 ± 1.024	
		Total	1437	3.05 ± 1.244	
3	School location/Distance from pupils home	Principals	10	3.65 ± .869	.000*
		Students	1387	2.41 ± 1.301	
		Teachers	40	3.49 ± 1.274	
		Total	1437	3.03 ± 1.364	

Table 8. Jimma Zone Respondents Views on Teachers related factors in 2015 G.C

Item no	Factors	Respondents	N	Mean score ± SD	P-value
1	Shortage of qualified and experienced teachers	Principals	10	2.22 ± 1.051	.358
		Students	1387	2.45 ± 1.339	
		Teachers	40	2.23 ± 1.119	
		Total	1437	2.33 ± 1.217	
2	Inadequacy of educational guidance and counselling	Principals	10	2.94 ± 1.076	.517
		Students	1387	2.98 ± 1.239	
		Teachers	40	3.06 ± 1.379	
		Total	1437	3.01 ± 1.286	
3	Lack of teachers encouragement/motivation for students	Principals	10	2.22 ± 0.969	*.000
		Students	1387	2.95 ± 1.235	
		Teachers	40	1.97 ± .841	
		Total	1437	2.43 ± 1.149	

Analysis of factors for students' motivation in high schools

There are several factors that contribute to students' motivation of high schools. In line with this, prior findings revealed that the influence of schools contextual (in schools factors) are more significant than out of schools factors in contributing to students motivation of schools and in determining their learning outcomes (Janine Huisman and Jeroen Smits, 2012). Thus, this part of the paper was organized on the influences of in school factors on students' academic motivation toward mathematics of high schools are discussed in order to examine the major factors contribute for students' motivation of high schools and also the effects of students' academic motivation of high schools on educational provision of the study area and strategies help to motivate the student were included in the analysis. The main purpose of the study was to assess the major factors that contribute for students' academic motivation toward mathematics of high schools of Jimma Zone. So that an attempt was also made to identify some in school factors that may have significant contribution for students' extrinsic motivation of high schools (grade 10) towards Mathematics in

The influence of the all factors is not equally significant. In order to identify the impacts these factors, the researcher presented and analysed the findings of the study in accordance with the research questions and items order in the questionnaires.

In school factors

The major factors that determine students' motivation in mathematics of high schools were in school factors. This includes school facilities, curriculum irrelevance, large class-size, school location or distance from pupils home, teachers' related factors and students' related factors. Therefore, the influences of these factors on students' academic motivation are discussed in the Table (7-11) here under. It was hypothesized that schools facilities and educational materials expected to have direct relationship in determine student's motivation toward mathematics in the school. The schools with shortage of schools facilities and educational materials more likely contribute to students' not to motivation than schools with better facilities and educational materials (Rumberger, 2001; World Bank, 1988).

The computed mean scores of principals 3.62, students 3.47 and the teachers were 2.66. The overall weighted mean of the three groups of respondents was (3.13) above average (3.0). There was significant ($p < 0.001$) mean scores differences among the three groups. Therefore, this is indicating that inadequacy of library service contributed for students' academic motivation of high schools in the study area. Likewise respondents were asked to indicate the extent of the influence of inadequacy of reference books in the High Schools Library on students' academic motivation on their schooling in the study area. Findings from the three groups of respondents showed that lack of significant difference ($p > 0.05$) between inadequacy of reference books and student's motivation. Therefore, it is possible to deduce that, in adequacy of reference books in the High Schools Library do have an influence on students' academic motivation in their schooling.

So that it is safe to conclude that inadequacy of library service and reference books in the High School Library are among the various factors cause for students' academic motivation of High Schools in the study area. Similarly, the prior findings of study by Amare (1998) confirmed that one of the major serious problems of High Schools of the country is in adequacy of library service and reference books as well. Concerning the impacts of the in adequacy of laboratory service and its equipment's for students motivation the computed overall mean scores for three groups on item number 3 and 4 were 3.04 and 3.01 respectively and the p-values are less than and greater than .05 and respectively. Thus this showed that, the mean score difference on the item 3 and 4 in the Table 7 among three groups of respondent were significant and not statistically significant at 5% confidence level respectively. Therefore, it is safe to deduce that inadequacy of laboratory service and its equipment's do have an impact on students' academic motivation.

Moreover, the PTA or community members participated in focus groups discussion also indicated that inadequate supply of schools facilities are the acute problems in the High Schools in the study area. The present finding is agreed with the previous findings of study by Amare (1998). According to the report in adequacy of laboratory service and its equipment have impacts on students learning out comes and academic motivation in schools system. Table 7 presents principals and teacher's responses on influences of schools facilities by relating their contribution as a factor for students' academic motivation in Jimma Zone. As indicated item number 5 in Table 7 item, there is no significant means scores difference among the groups of respondents at 0.05 level of significance. The overall mean score for the three groups was 2.50, indicating that, absence of pedagogical center in high schools of the study area was not among the factors contribute for students' academic motivation of high schools in the study area. As indicated item number 6 in Table 7, there is significant means scores difference among the groups of respondents at 0.05 level of significance. The overall mean score for the groups was 2.64, indicating that shortage of classroom in the high schools of the study area was not among the major factors contribute for students' academic motivation of schools systems in the study area. There was statically significant mean score difference among responses of respondents at .05 level of significance. The computed mean scores of the principals, students and teachers and the overall mean score was below average 3.0 (Table 7).

Thus, it could be safe to generalize that shortage of text books was not among the factors contributed for students' academic motivation of High Schools (Table 7). The overall means score for the three groups was 3.17 indicating that, shortage of desks and chairs in the High Schools of the study area do have significant impacts on students' academic motivation in schools system. The current findings matches with the other studies by Adane (1993), and Anderson (1992) confirmed that shortage of schools facilities can hinder students' progress and also contribute to students' academic motivation of schools, and they also stated that schools with better facilities and educational materials might have positive effects on students' progress and academically motivate in the schools system than their counter parts. In this study in addition to school facilities an attempt has been made to examine the impacts of irrelevance of schools curriculum, large class-size and school location or distance from pupils home. Thus Table 9 is accompanied by discussion about these factors hereunder.

Table 8 presents the principals, students and teachers response on impacts of irrelevance of curriculum, large class-size and schools location/distance from pupils' home on pupils' academic motivation in the study area. As can be seen from item number 1 in the above Table (Table 8) principals, students and teachers were asked to give their responses to the extent of the irrelevance of curriculum contribute to students' academic motivation the study area and the overall assessment made to check the irrelevance of curriculum appeared to below average in all the three groups giving the weighted mean score of 2.23. In order to examine differences that may exist among the three was difference among respondents opinion at 0.05 level of significance. Thus this show that irrelevance of curriculum is not among factors causes students' academic motivation of High schools in the study area. This finding however, is not confirms with the previous other findings of studies on the effects of the irrelevance of the school's curriculum on students motivation. According to these report one of the major problems in Ethiopian education system is the irrelevance of curriculum (Amare, 1998:295).

Moreover, the curriculum which is not connected to the societal problems and pupils needs is the major causes for students' poor performance and motivation (Tilaye, 1999:33). Pertaining to the influences of the large class size on students' academic motivation in the study area was computed. The calculated mean score of principals 3.47, students 3.40, teachers 2.59 and the overall 3.05 are found to be above average 3.0 and the mean scores difference among respondents opinion was statistically significant (Table 8). So that it is possible to generalize that, the large class size is one of among the factors contributed to students' academic motivation of High Schools. In line with these findings PTA members of all the schools indicated that large class size was one of the major factors contribute for students' academic motivation in the study area. Similarly, the recently made studies reported the same findings.

Table 9. Jimma Zone respondents' view on teachers support, encouragement, and Motivation in 2015 G.C

Item no	Factors	Respondents	N	Mean score ± SD	P-value
1	Inadequacy of teachers support in providing extra tutorial program for student.	Principals	10	2.59 ± 1.153	.000*
		Students	1387	3.78 ± 1.094	
		Teachers	40	2.55 ± 1.327	
		Total	1437	3.10 ± 1.350	
2	Less motivation of teachers to ward teaching	Principals	10	3.78 ± .812	.000*
		Students	1387	3.30 ± 1.270	
		Teachers	40	2.72 ± 1.334	
		Total	1437	3.09 ± 1.307	
3	Poor lesson presentation of teachers	Principals	10	2.22 ± .878	.000*
		Students	1387	2.40 ± 1.449	
		Teachers	40	1.63 ± .721	
		Total	1437	2.03 ± 1.174	

Table 10. Jimma Zone Contribution of Students related factors for students' academic motivation in 2015 G.C

Item no	Factors	Respondents	N	Mean score ± SD	P-value
1	Regular absenteeism of students	Principals	10	3.31± 1.101	.000*
		Students	1387	3.73 ±1.215	
		Teachers	40	2.97 ± 1.351	
		Total	1437	3.34 ± 1.313	
2	Grade repetition of students	Principals	10	3.09 ± 1.113	.080
		Students	1387	2.52 ± 1.375	
		Teachers	40	2.80 ± 1.348	
		Total	1437	2.71 ± .512	
3	Students lack of interest/motivation ward learning	Principals	10	3.94 ± 1.049	.000*
		Students	1387	3.01 ± 1.337	
		Teachers	40	3.60 ± 1.330	
		Total	1437	3.38 ± 1.345	
4	Poor academic background	Principals	10	3.5 ± 1.243	.010*
		Students	1387	3.17 ± 1.341	
		Teachers	40	2.73 ± 1.560	
		Total	1437	3.01 ± 1.455	

Table 12. Spearman Rank Order correlation coefficient of teachers and students response

No	factors	X	Rank (x)	Y	Rank (y)	X-Y (D)	$(X-Y)^2$ $(D)^2$
1	Curriculum irrelevance (difficulty, broadness of subjects and etc.)	1.14	14	1.57	13	1	1
2	Large class size	2.57	6	2.00	10	-4	16
3	In adequacy of school facilities and educational materials (desks, chairs, books and etc.)	4.79	1	3.21	3	-2	4
4	School location or distance from pupils home	2.71	5	2.93	4	1	1
5	Inadequacy of educational guidance and counselling services	2.29	7	3.57	2	5	25
6	Lack of teachers encouragement or motivation for students	1.29	13	1.71	12	1	1
7	Shortage of qualified and experienced teachers	1.79	11	1.42	14	-3	9
8	Poor academic background of pupils	3.07	4	2.64	7	-3	9
9	Less motivation of teachers to ward teaching	2.00	10	2.36	8	2	4
10	Poor lesson presentation of teachers	1.50	12	1.86	11	1	1
11	Inadequacy of teachers support in providing extra tutorial programs for learners	2.07	9	2.79	6	3	9
12	Regular absenteeism of students from	3.36	3	4.14	1	2	4
13	Grade repetition of Students	2.14	8	2.21	9	-1	1
14	Law motivation (interest) of students to ward learning	4.00	2	2.86	5	-3	9

Y= teachers mean, X= students mean D= deviation $\sum (D)^2 = 94$ and r = 0.79

These studies revealed that, the over crowdedness of the class room is one of the observed problems in education system of the country (Workis, 2011; Zerihun, 2011: Nuri, 2008; Bekele, 2004). Moreover, Habtamu (2002) asserted that large class size is one of the major causes for inefficiency of education system in the country. Concerning the schools' location or distance from pupils' home influence on the students' academic motivation in the schools system, the computed means scores of the principals, students and teachers and overall mean score for item 3 in Table 8 were 3.65, 2.41, 3.49 and 3.03 respectively and there is statistically significant means scores difference among the groups of respondent's opinion.

Therefore, it is safe to conclude that schools location or distance from pupils' home do have an impact on students academic motivation in the study area. In confirm with this finding all the PTA and community members revealed that schools distance from pupils home is the most serious factors that contribute for students' academic motivation high schools. This finding is confirms with the other study reports on the effects of schools' distance or location on students' academic motivation of schools. According to these reports, moving long distance is problematic, it consumes pupils' time, energy and it may be made parents to suspect about their children's safety on the way to and from schools (Teshome, 2003; Odaga and

Henenveld, 1995). Moreover, the long-distance between home and school may induce high direct cost for transportation and also increase the lost earning costs of students (time for house hold chores). Hence this situation may discourage their parents to allow their children go to school or discontinue their schooling (Tilaye, 1998:83). Similarly Emebet (2002) and Mekasha (2000) reported that most secondary schools in the country concentrated in urban area. As a results many students from rural area often moving long hours' or experiencing extra cost incurred for transportation, for accommodation and for better quality of clothing to meet in to the urban standard despite of these a large number of students forced to discontinue their schooling since they failed to afford schools cost than urban students.

Therefore it is very critical to bringing schools closer to the pupils' home to minimize the opportunity costs, the costs for transportation and to increase students' academic motivation of High Schools. Table 9 Presents principals, students and teachers response on factors contribute for students' academic motivation in high schools of Jimma Zone. As can be seen from Table 9, items number 1 respondent was asked to indicate the extent of the influences of shortage of experienced teachers on students for schools leaving in the study area. Thus, the computed weighted mean score of the three groups of respondents was 2.33. That is found to be below average 3.0 and the item mean scores are statistically not significant; this means that, responses reported by three groups on item is similar. Therefore shortage of qualified and experienced teachers is not among the major factors for students' academic motivation in the study area. This finding is not confirms with the prior findings of studies. According to the study reports one of the major constraints that adversely affecting internal efficiency of education is related to low qualification of teachers (Graham-Brown 1991). However, the teachers' qualification and experience is not the cause for students' academic motivation in the study area.

Pertaining to lack of educational guidance and counselling services, the computed mean scores of the principals 2.94, students 2.98, teachers 3.06 and the weighted mean 3.01 respectively (Table 9). It indicates that, there is no statistically significant difference among the groups opinion. This revealed that lack of schools guidance and counselling services is one of among the various factors contributed for students' academic motivation in the study area. This findings is confirms with the prior reported findings of studies. According to these report the most majority of students in secondary schools found at teenage stage, as a results they meet complex life time difficulties that may results in low level of achievement in their learning tasks and the age of puberty is as a factor for student's academic motivation toward mathematics in school.

Therefore, in order to motivate pupils in the schools system and to reduce their academic problems, the provision of schools' guidance and counselling services very essential at all high school level. The last not the least teachers' related factor in the Table 9 item 3 is on the lack of teacher's motivation or encouragement for students. The mean scores for principals 2.22 students 2.95, teachers 1.97 and the weighted mean 2.43 and there is statistically significant mean scores difference among the three groups responses at 0.05 level of significance. Thus, it could be possible to deduce that, lack of teacher's encouragement or motivation for students is not among the major factors for students' academic motivation in the Jimma Zone. This finding is not confirms with the other findings of studies. According to these reports the attitude and expectation of teachers towards their pupil's ability and future progress is influencing students learning and efficiency of school system.

As can be seen from Table 10 item number 1, there is mean scores difference among the respondents opinion at 0.05 level of significance. The overall mean score for the three groups was 3.10 revealed that, inadequacy of teachers support in providing extra tutorial program for pupils do have an impact on students' academic motivation in the study area. The item number 2 in Table 10 the computed overall mean score of the three group of respondents was 3.09. The mean score of respondents' opinion was statistically significant at 5% confidence level. This means that, responses reported by the three groups on less motivation of teachers do have influences on student's academic motivation in High Schools in the study area.

As can be observed item number 3 in Table 10, there was significant mean score difference among the three groups at 0.05 level of significance. The weighted mean score for the groups was 2.03 indicated that, poor lesson presentation by teachers is not among the major factors contributed for students' academic achievement in the High Schools in the study area. Table 11 presents principals, students and teachers response on the extent of influences of students' related factors for academic motivation form High schools of Jimma Zone. As can be seen in item number 1 in Table 11, respondents were asked to indicate their responses on pupils regular absenteeism form schooling as a factor for students' academic motivation in High schools in the study area. Accordingly, the computed weighted mean score of the three groups of respondent's response was 3.34 found above average. This indicated that the respondent's opinion is statistically significant of 0.05 levels (Table 11). Thus, it is safe to deduce that pupils' frequent absenteeism from schooling contributes for students' academic motivation in the study area. Moreover, the PTA and community members participated in the focus groups discussion revealed that, regular absenteeism was the common problem in the study areas.

The current finding matches with the studies reported by Joanspade (2008), Dorn (1996) and Melisa (1993) confirmed that, being absent frequently from schools have strong association with students' academic motivation. Similarly, Tilaye (1999) and Asmaru (1998) asserted that, most pupils are missing from schools, due to various reasons: Barden from house hold chores ill-health, failure to do homework, conflict with school community, attending religious holidays and etc. Moreover, Graham and Brown (1991) confirmed that, the more pupils absent schooling, the more they poorer in their achievement, the more higher the chance for failure and the more difficult to motivate academically in the schools system.

Pertaining to the impacts of the grade repetition, on academic motivation of the students in schools system in the study area, the calculated over all mean score of the three groups was 2.71 (Table 11). This shows there is no statistically difference

among the mean scores of respondent's opinion at 0.05 significance. Therefore it could be safe to deduce that, grade repetition of pupils is not among factors contributes to students' academic motivation in the study area. Regarding to the extent of the influences of students lack of interest/motivation toward learning contribute for students' academic motivation of high schools in the study area, respondents were asked to rate their opinion and the calculated mean scores of the principals 3.94, students 3.01, teachers 3.60 and the weighted mean 3.38 respectively (Table 12) and The three is statistically significant mean opinion difference at 0.05 level of confidence. Therefore, it could be possible to conclude that, students lack of interest to ward learning is one of among the major factor contributed for students' academic motivation of high schools in Jimma Zone.

The last students related factors in corporate in Table 11 item 4 was poor academic background of pupils. The computed mean scores for principals 3.50, students 3.17 and teachers 2.73 respectively and there was difference among mean scores of respondents at 5% of confidence. The weighted mean score of these groups was (3.01) found to be above average (3.0). Thus, it could be safe to conclude that poor academic background of students is one of the major factors contributed for students' academic motivation in the study area. In line with this finding all PTA from sample woredas indicated that academic background of pupils contribute for students' academic motivation in the study area. According to their views most students with poor academic background often quit the schools, after completing first semester when the first semester courses results below expected. The current finding confirm with prior studies reported by Tirusew (2000), and Brimer and Pauli (1971). According to these report one of the causes of pupils' academic motivation from schools is frequent repetition of grade, early failure in the schools would be made pupils to be failure oriented, this in turn, negatively affecting children expectations for success and the academic motivation of schools.

Similarly, pupils' interest/motivations toward learning is also another factor that determines the performance and their academic motivation in the schools system (Weymer, 2002:37). Furthermore, pupils have poor academic background often achieve less in their learning and more likely show tendency of less academic motivations in schools system (Graham- Brown, 1991). The Table 13 presents teacher and students' respondents' response on 14 in school factors in order to see the association or correlation between two groups of respondents on these factors by using spearman rank order correlation coefficient. As can be observed from Table 13, respondents were asked to rank the 14 items, by taking onto account their contribution on students' academic motivations in high schools, from the most serious problem to the least. Accordingly, teachers respondents were ranked that 1) inadequacy of schools' facilities and education materials, 2) pupils lack interest/ motivation to ward learning, 3) regular absenteeism, 4) poor academic background of pupils, 5) schools location or distance from pupils home, 6) large class-size, 7) lack of guidance and counselling services 8) grade repetition, 9) absence of teachers support and 10) less motivation of teachers to ward teaching, are among in school factors contribute for students' academic motivations in the study area. Concerning students respondents responses, they were ranked 1) regular absenteeism students from schooling, 2) in adequacy of guidance and counselling services 3) in adequacy of schools' facilities and educational materials, 4) schools location/ distance from pupils home 5) pupils lack interest toward learning 6) inadequacy of teachers support especially for slow learners or low achievers 7) poor academic background of students, 8) less motivation of teachers toward teaching 9) grade repetition of students and 10) large class size are among the major in school factors contribute for students' academic motivations in study area. An attempt was made to examine the association between the respondents response in aggregated manner. Thus, the computed spearman rank order correlation coefficient result 0.79. This indicated that, there exists strong positive correlation between two groups of respondents' opinion in these items.

Analysis of effects of motivation

Suggestion to maximize student's academic motivations

The intervention measures suggested by principals, Teachers, students, PTA and educational experts were summarized as follows:

Measures to be taken by government: improving the provision of school facilities to minimize shortage of school facilities, constructing schools at appropriate place: by carefully assessing suiTable site for the majority of community before making decision for site selection and /or school building: subsidizing some educational materials for disadvantaged pupils, advocating benefits of education and adverse effects of students' academic motivations on pupils, parents, and society as a whole: though mass media such as T.V and radio in order to foster their concerns and knowledge for educating their children.

Measures to be taken by schools (teachers, principals, and school community)

Improving school and community relation, improving provision of quality education, creating the school environment, safe, comforTable and attractive for learners, improving the provision of tutorial program to support students with learning problems, improving teachers and parents relation, setting ground rules and taking in to practices at school level, by involving parents, students teachers, PTA and community leaders as well. In addition to the above strategies improving monitoring of students school attendance and academic performance to increase academic motivation of students towards mathematics often caused by frequent absenteeism, low academic achievement, improving the provision of guidance and counselling services could be easily accessible for needs students regularly.

Measure to be taken by parents and community: working in close collaboration with schools, supervising continuously their children's at schools and outside schools, giving sufficient time for their children for school takes, providing schools with materials and financial supports to minimize shortage of schools facilities, and also contributing their share

to prevent and minimize students' absenteeism in order to increase academic motivations of the students towards mathematics.

Summary: The summary of the findings is presented below into four sub sections

Analysis of factors: The analysis and discussions have been made on data gathered on factors contribute for students' extrinsic academic motivation towards mathematics of high schools and the obtained findings were presented here under.

In school factors

- As far as inadequacy of school's facilities and educational materials concerned, the majority of respondents reported that, library services, reference books in the libraries, laboratory services, laboratory equipment's, desks and chairs were supplied inadequately in the study area.
- Moreover, as far as in school factors such as large class-size concerned the great majority of respondents rated above average.
- Concerning teachers' related factors such as inadequacy of educational guidance and counselling services, in adequacy of teachers support and less motivation of teachers to ward teaching the majority of respondents rated above average.
- As far as students related factors such as students' lack of interest or motivation toward learning and poor academic background of pupils concerned the three groups of respondents reported above average.

Finally, as far as in-school factors concerned, teachers and students were asked rank the major factors contribute for students' academic motivation in mathematics from the most serious factor to the least factor. Accordingly, in adequacy of school facilities and educational materials, pupils lack interest to ward learning, regular absenteeism of pupils, school distance from pupils home, large class-size, inadequacy of guidance and counselling services, inadequacy of teachers support for low achievers and less motivation of teachers were listed by both group.

Conclusion

Based on the findings the following conclusions can be drawn: In confirm with the study finding the analysis of data obtained from PTA, high school principals, teachers and students revealed that academic motivation decreased from time to time in the zone due to:

The study associated that inadequacy of school facilities and educational materials such as library services, reference books, laboratory services and its equipment's, desks and chairs, large class size were among the major in school factors responsible factors contribute for students' academic motivations in the study area. This implies that the situation of school environment is not conducive for students learning; this may make difficulty for students' academic motivation in the school system towards mathematics.

Furthermore, the study revealed that inadequacy of educational guidance and counseling services, inadequacy of teachers support for pupils, especially for low achievers and less motivation of teachers to ward teaching were among the teacher related factors responsible for students' academic motivation of high schools in the study area. Thus, the study shows that teachers related factors are among the major factor responsible for students' academic motivation of high schools in the study area. The study make known that frequent absenteeism of pupils (most students' absent from school, for five to fifteen day with in a semester, such students' most likely show a tendency of low academic motivations of schools than their counter parts. Therefore, it is possible to conclude that, regular absenteeism of pupils is one of the major students' related factors that contribute for low academic motivation rate in high schools of the study area. Moreover, the study revealed that pupils' related factor such as lack of interest to ward learning and having poor academic background were the major responsible factors for students' academic motivation towards mathematics in the study area.

The study also revealed that the majority of students' respondents were coming from rural community practicing in agricultural activities to support their families. In such case the chances of the involvement of children in domestic works are very high. As a result some parents might prefer their children's helping them at farm than sending them to schools and also some parents might be forced those children to absent from high schools. Due to these problems the number less motivated students of high schools gong up rather than going down in Jimma Zone. Finally, the current study findings implied that in school factors: inadequate supply of school facilities, lack of teachers support for pupils with learning difficulty, inadequacy of guidance and counselling services, regular absenteeism of pupils, students consider mathematics as difficult subject, less motivation and poor academic background of pupils are the major responsible factors for pupils' low academic motivation toward learning mathematics in study area. As a result of these their academic motivation rates have been still going down rather than going up. Generally, the current study findings implied that students' low academic motivation of high school is the cumulative effect of both in school and out of school factors, especially students involvement in domestic works to support their parents in farming activities during coffee and others crop harvesting season, students lack of interest to ward learning and poor academic background of students: lack of appropriate guidance and counselling services and lack of teachers support for students have poor academic backgrounds are the major identified factors in the study area.

Therefore, changing current trends of academic motivation: perceiving and taking as responsibility of school's community alone might rather complicate the academic motivation problem. So that to prevent and minimize factors that affect the academic motivation of the students toward learning mathematics in the study area needs urgent coordinated efforts and participations of all school community, parents, local community and commitment and focus of school management, WEO, local administers and JZEO as well. Thus changing the current trends of academic motivation of the student also

implies a need for urgent remedy for improvement from both in schools and out of schools environment.

Recommendation

Based on the major findings and conclusions drawn with respect to the factors contribute for students' academic motivation toward learning mathematics in general secondary schools in the Jimma Zone the following recommendations are suggested.

Promoting parents and pupils awareness

The analysis of data revealed that, trends of academic motivation rates in high schools (grade 10) of the study area were low and indicated a pattern of a decreasing tendency. Therefore, so as to reduce this problem: and improve pupils and community awareness the WEO, schools, and the local administrations should improve by taking the following measure.

- The schools' management should improve schools and community relation and their participations in school affairs by improving their involvements in school management, planning school development and school decisions.
- The WEO and schools management implement schools and community address at school level on the problem of academic achievement toward learning mathematics and negative effects of academic motivation in individual learner, parents, and maximize students' academic motivation.
- School and the WEO should develop ground rules and take in to practices at schools level to prevent and overcome pupils' absenteeism, class missing, and motivating students by involving pupils, teachers, PTA, parents and community leaders.
- Inform the pupils, parents, and community leaders' to foster their knowledge and concerns on benefits of education in improving individuals and community life.

Improving the supply of school facilities

The supply of sufficient schools facilities and educational materials in all high schools have significant function in making schools conducive, attractive and safe learning environment for students and it also helps to increase the academic motivation of students caused due to inadequate supply of school facilities and educational materials and uncomforTable learning environment as well. As the findings of the study have revealed, schools facilities such as library services, reference books, laboratory services and its equipment's, desks and chairs have supplied inadequately. Thus intern experts influences on pupils to discontinue their schooling in the study area. Therefore, to improve schools situations and increase the academic motivation in high schools, the JZEO, WEO and schools should take the following measures:

- The WEO, and the schools principals, teachers, and PTA should mobilize the community to improve schools and community relation, and their involvement in school affairs and consult with parents', community and to find common solution for major school problems, including shortage of school faculties such as library, additional up to date reference books, desks, chairs.
- The JZEO, WEO and in consultation with OEB should furnish all high schools with laboratory and its equipments, library and additional up to date references.

Providing guidance and counseling services

The majority of pupils at secondary schools level are found at adolescent age. As results most teenagers encounter enormous psychological, social, economic and learning problems. Thus, to minimize these problems, the provision of appropriate guidance and counselling service has the following essential functions: helps pupils to develop positive attitudes, good behaviour, and discipline manifested at schools and out of schools. It also supports to reduce students' emotional and academic difficulties and help to develop positive attitude toward learning, and promote their knowledge about values of education, academic difficulties, and emotional problems encountered teenagers. Thus, to improve this service and increase students' academic motivation caused by these problem:

- The JZEO should focus, facilitate and enforce the provision of guidance and consoling service in all high schools.
- The WEO should find and assign trained personnel for high schools.
- The schools principals should assign full-time personnel for both boys and girls to improve their academic motivation and provide accessible services for needy pupils.

Creating attractive and supportive learning environment

Creating attractive and supportive learning environment hinder challenges that faced learners during their stay in schooling and supports to improve pupils' academic motivation in schooling system and also reduce students' school leaving. This could be realized when teachers identifies, and recognize pupils background including their social, economic, academic and emotional problems and play their role to make the classroom instruction that meet each individual needs. Thus, to make the learning environment conductive for learners.

- Schools should institute tutorial program by consulting with base by participating pupils, teachers, and parents.
- Teachers should offer extra tutorial programs at extra time to supplement the regular schooling schedule.
- Teachers motivate and advise sudents to foster their attitudes and interest to ward future learning.

Building high schools at appropriate location

It is known that the government has been made many efforts in constructing high schools at all woredas, but most of high schools are built at woredas' town. As a result most pupils

completing their primary education forced to move long distance to reach schools and also subjected to additional cost for transpiration and accommodation in town. This situation complicated their academic motivation in the schooling system. As a result large number of students forced to discontinue schools early. Therefore, to improve this situation and maximize the academic motivation of the students' due to school distance the JZEO, WEO, and the local administrations in consultation with OEB should build schools at appropriate location or places after conducting careful studies with community for appropriate place before making decision for site selection.

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REFERENCES

Adane Tessera, 1993. Wastage in primary schools of Bahir Dar Amhara Educational administration Unpublished M.A Thesis, AAU.

AmareAsegdom, 1998. Teachers perceptions of Educational problem in Ethiopia. Quality Education in Ethiopia: Visions for the 21st contrary proceeding of National Conference Held in Awasa College of TeachersEducation. 12-18 July 1998: AA, Institute of Educational Reasearch. AAU.

Asmaru Birhanu, 1998. Gender and primary Education in Ethiopia in AmareAsegdom et al.,(eds). Quality Education in Ethiopia Vision for the 21stcentery AA. Printing press.

BekeleAtto, 2004. A study of factor Associated with Westage in Secoundary Education. Unpublished M.A Thesis, AAU.

Brimes, M.A, and L. Pauli, 1971. Wastage in Education: A World Problem PARIS: UNESCO/IIEP.

Brown, S.G. 1991. *Education in the Developing World:* Conflict and Crisis, London: Addison Weslly Longman Limited

Deci, E. L. and Ryan, R. M. 1985. Intrinsic motivation and self- determination in human behavior. New York: Plenum Press.

Demmrich, A. 2005. Improving reading comprehension by enhancing metacognitive competencies: An evaluation of the reciprocal teaching method. Unpublished doctoral dissertation, University of Potsdam

Dorn, S. 1996. Creating the dropout: and Institutional and social History of school Failure/Sherman Dorn. Greenwood Publishing Group, Inc.

Emebet Mulugeta 2002. Accessing personal and social resources to cope with education: The case of female student's paper presented on a Forum prepared by Panos Ethiopia.

Entwistle, N. J., Thompson, J., and Wilson, J. D. 1974. Motivation and Study Habits. *Higher Education*, 3:379-396.

Franken, R. 1994. Human motivation. Pacific Grove, CA: Brooks/Cole.

Geen, R. G. 1995. Human motivation: A social psychological approach. Belmont, CA: Wadsworth.

Guilloteaux, M. J. and Dörnyei, Z. 2008. Motivating language learners: A classroom oriented investigation of the effects of motivational strategies on student motivation. TESOL Quarterly, 42(1), 55–77.

Habtamu Wondimu, 2002. A Study of Drop out in selected primary schools of two regions in thiopia. The Ethiopia Journal of Education.Vol. 22 No. 2 Addis Abeba:MoE Public Relation Service.

Hannula, M. S. 2006. Motivation in mathematics: Goals reflected in emotions. Educational Studies in Mathematics, 63, 165–178

Hebb, D. O. 1955. Drives and the C.N.S. (conceptual nervous system). Psychological Review, 62, 243–254.

Kleinginna, P. R., Jr. and Kleinginna, A. M. 1981. A categorized list of motivation definitions, with a suggestion for a consensual definition. Motivation and Emotion, 5(3), 263–291.

Li, J., Davis, H. and Lomax, R. 2008, October. Utilizing factor analysis to examine high school students' academic motivation. Paper presented at the annual meeting of the MWERA, Columbus, Ohio.

Mankin, K. R., Boone, K. M., Flores, S. and Willyard, M. R. 2004. What agriculture students say motivates them to learn. NACTA Journal, 48(4): 6–11.

Mekasha Belete, 2002. Some Factors Affecting Female Pupil's Participations and Acadamic Performance in Primary Education in Amhara Region. Unpublished MA Thesis.

Model, E. D. 2005. Creation and validation of the dual motivation profile scale. Unpublished doctoral dissertation, University of Florida.

Ngaosuvan, L. 2004. Motivation and episodic memory performance. Un published doctoral dissertation, UmeåUniversitet.

NuruNuri. 2008. Factors Influencing Femals Drop out in some selected Secondary Schools of Arsi Zone. Unpublished Thesis, AAU.

Odega and Henenveld, 1995. Girls and Schools in sub-sahara African: from Analysis of Action. Washington D.C.: World Bank.

Russel, W. Rumberger 2001. Who drops out of school and why Unversity of California Santa Barbara: Understanding Dropouts: Statistics, Strategies and High stakes Testing, Washington, DC. National Academy Press.

Ryan, R. M. and Connell, J. P. 1989. Perceived locus of causality and internationalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology,* 57, 749–761.

SabitaMahanta and MofidualIslam,Int.J.Computer Technology and Applications,Vol 3 (2), 713-715

Stromquist, N. 1997. Increasing Girls and Women's Participation. Paris: UNESCO.

TeshomeNekatibeb. 2002. Law Participation of Female Students in Primary Education a case study of Dropouts from the Amahara and Oromia Reginal states in Ethiopia. UNESCO, International Institute capacity Building in Africa. A.A. Ethiopia.

TilayeKasahun. 1999 Problems of Secondary School Dropout in East Gojam. *Ethiopian Journal of Education*. Vol.19, no.1.AAU.

Walker, R. T. and Guzdial, M. 1999. Collaborative music to motivate mathematics learning. Retrieved October 15, 2008.

Weiner, B. 1990. History of motivational research in education. Journal of Educational Psychology, 82(4), 616–622.

Workisa Anbesu 2011. Factors Affecting Students Drop out in Secondary Schools of Arsi Zone. Unpublished M.A Thesis, AAU.

Zerhun Mamo. 2011. Factors affecting Female Students in General Secondary Schools of Hadiya Zone. Unpublished, M.A Thesis, AAU.

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