



Original Article

Approaches to Learning and Trainees' Academic Achievement in Polytechnic Colleges of West Hararge Zone, Oromia Regional State

Mohammed Gobeze^{1*}, Assoc. Prof. Tamirie Andualem, PhD², Assoc. Prof. Gemechu Abera, PhD¹

¹ Haramaya University, P. O. Box 138, Dire Dawa, Ethiopia.

² Addis Ababa University, P. O. Box 1176, Addis Ababa, Ethiopia.

* Author for Correspondence ORCID ID: <https://orcid.org/0000-0002-0886-2639>; Email: gobeze2003@gmail.com

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The main purpose of this study was examining the relationship between approaches to learning and academic achievement, the extent to which approaches to learning predict trainees' academic achievement, and determining gender differences between male and female trainees in approaches to learning and academic achievement in Polytechnic Colleges. Mixed research approach particularly explanatory sequential design was used. Stratified random sampling and purposive sampling were used to select study settings and participants. Data were collected from five Polytechnic Colleges through questionnaire. Population of this study is 372 (183 male and 189 female) trainees. With response rate of 85%, the main analysis was done based on 315 trainees' (155 male and 160 female) questionnaire responses. Pearson Correlation Coefficient, regression analysis, and independent sample t-test were employed to analyse the collected data. Thus, Pearson correlation coefficient revealed statistically significant positive association of trainees' academic achievement with approaches to learning ($r = .59$, $r^2 = 34.81\%$, $p < .001$). Regression analysis results showed that approaches to learning is significant predictors of trainees' academic achievement in polytechnic colleges. The independent sample t-test analysis results indicated that there is no gender difference between male and female trainees in approaches to learning and academic achievement. On the basis of these findings conclusions and recommendations were made.

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INTRODUCTION

In a contemporary world, nations are giving top priorities for producing skilled manpower at different levels through education and training to drive nation's overall productivity. In Ethiopia, Polytechnic Colleges (PTCs) are among widely established institutions aimed at producing low and medium levels skilled manpower targeting on equipping trainees with practical oriented skills (MoE, 1994). According to Ministry of Education MoE (2009), in the year 2009, there were total of 458 Polytechnic institutions with total enrolment of 308,501. Ethiopia is the second in Africa in terms of number of training institutions (MoE, 2010).

Regardless of the efforts made by the government, Polytechnic college trainees' academic achievement is becoming poor and poor from time to time (According to the researcher's personal experience and empirical evidences ()), PTC trainees' academic achievement is declining. Of many other factors that could affect trainees' academic achievement in PTC, trainees' related factors, like for instance, trainees' learning orientation can be mentioned.

Education scholars argued that in any educational institutions, highest responsibility will be given to trainees/learners themselves for their academic success or failures. For instance, Bandura (1997)

concludes as follows "learner academic achievement in all kinds of educational institutions is more likely to take place when learners believe that their individual effort matters. On the contrary, the probability of learner academic achievement is reduced when they feel hopeless" (p. 149). Moreover, Gulzar et al. (2010) argued that among many other factors, learner related factor is associated with their orientation to learning in many ways and finally contributed to either learners' academic success or failures. Because there is a general acceptance that the manner in which learners/ trainees are inclined to approach a learning situation has an impact on achievement of learning outcomes in any educational institutions (Simon, 2004).

Therefore, it is worth focusing on learner related factors mainly approaches to learning as determining factors of effective learning and academic success and failures in Polytechnic colleges. Some earlier studies, separately, tried to explore the extent to which approaches to learning (deep approach, surface approach, and strategic approach) influence trainees' academic achievement in high schools and higher education institutions (Marton & Saljo, 1984; Clouder et al., 2008; Lee & Shute, 2010). However, the influences of approaches to learning on trainees' academic achievement (when both heteronomous evaluation of academic achievement (HAA) and autonomous

evaluation of academic achievement (AAA combined) in polytechnic colleges was not sufficiently studied.

Learning is defined as a relatively permanent behavioural change as a result of experiences, practices, and tutoring (Barron et al., 2015). The quantity and quality of learning is determined by the approaches to learning trainees adopt. The way that trainees approach learning plays an important role in determining the learning outcome of any educational institutions (Everson et al., 2000). In connection with this, various scholars, like Trigwell and Prosser (1991), Maina (2013), and Tenaw (2013) confirmed that students' learning outcomes are directly influenced by their approach to learning in different way. Based on their empirical research, Marto and Saljo (1976) and Biggs (1987) identified the three basic learning approaches adopted by trainees; namely deep approach, surface approach, and strategic approach.

According to Biggs (1987), a deep approach to learning is more likely to be adopted by learners with the necessary level of intention and high cognitive level to engage themselves meaningfully and appropriately with the subject matter and a preference for working conceptually. Moreover, a deep approach to learning focuses on the meaning of what is learned. That focus may involve testing the material against general knowledge, everyday experience, and knowledge from other courses. A learner taking a deep approach seeks principles to organize information. In contrast a learner using a surface approach tries to capture material in total, rather than understand the materials learned (Jackson, 2012)

A surface approach to learning is defined by Biggs (1987) as an approach whereby a learner learns only to pass assessment and fulfil the minimum requirements of learning. It is characterized by low level of cognitive activity. Biggs (1987) suggests that learners using a surface approach to learning end up using the memorization of facts. Strategic approach refers to the learner's motive to maximize performance to gain the highest achievable grades by using organized study skills and managing time wisely (Entwistle et al., 2001). Besides, Entwistle et al. (2001) coined out that, the students' study behaviours are heavily moderated by the

requirements of the assessment task but are generally highly structured and efficient. This may arise from student's achieving motivation. Achieving motivation typically refers to the level of one's motivation to engage in achievement behaviours, based on the interaction of such parameters as need for achievement, expectancy of success, and the incentive value of success.

Improving trainees' academic achievement is the main concern in any educational and training institutions (Heckman & Rubinstein, 2001; Le *et al.*, 2005). When analysing trainees' academic achievement, as an evaluation of learning outcomes, educators can distinguish heteronomous evaluation of academic achievement (HAA), which involves evaluation of a trainee usually made by teachers/trainers and an autonomous evaluation of academic achievement (AAA), when a trainee compares actual achievements with intended objectives (Zins *et al.*, 2004; Schmitt et al., 2009; Lukasova, 2010). Therefore, Liudmila and Petra (2011) and Komarraju and Nadler (2013) understood trainees' academic achievement as the combination of both HAA and AAA. Self-evaluation of academic achievement (AAA dimension of academic achievement) is valued because of its importance as a source of self-regulated learning process (Aria, 2011; Marcela & Lucia, 2016).

Although the approaches to learning and academic achievement of learners became the focus of research for the last few years, the influence of the approaches to learning using mixed research approach particularly explanatory sequential design when both academic achievement dimensions namely HAA and AAA combined lacks research coverage and were very limited. Thus, even studies conducted on approaches to learning and academic achievement were highly concentrated in higher education institutions and secondary schools (Duff et al., 2004; Hasnor et al., 2013; Sommer, 2013; Krumrei *et al.*, 2013; Kolo *et al.*, 2017).

Studies conducted on the approaches to learning and academic achievement, of course, without combining those dimensions of academic achievement (namely HAA and AAA) came up with inconsistent findings. Earlier studies on approaches to learning and academic achievement

indicated that approaches to learning were good predictor of academic achievement. For instance; Biggs (1987); Ramsden and Entwistle (1981); Marton and Saljo (1976); Trigwell and Prosser (1991); Everson et al., (2000); Bernardo (2003); Phan (2006); Liudmila and Petra (2011); Cetin (2016), in their study, concluded that approaches to learning is an important predictor of trainees' academic achievement. However, studies by Duff *et al.* (2004); Valadas et al., (2016); Kim et al., (2017) reported that all the three approaches to learning (deep, surface, and strategic approach) were found to be poor predictors of academic achievement. Furthermore, Hasnor *et al.* (2013) even conclude that there is no relationship between approaches to learning and academic achievement at all. These inconsistencies might emanate either from methodological gaps because most of the studies carried out on these issues used quantitative research approach (where mostly self-report inventories employed), sample size, disproportionality of study participants or from restricted data (where mostly course/certain courses performance and / or single semester performance used as academic achievement).

In Ethiopia, however, no studies were conducted on approaches to learning and academic achievement (when HAA and AAA combined) employing mixed research approach particularly explanatory sequential design with follow- up explanation model. This indicates that issue under investigation, the relationship of approaches to learning and academic achievement, the extent to which approaches to learning predicts polytechnic college trainees' academic achievement, and the gender differences between male and female trainees in polytechnic colleges lack research coverage in Ethiopia. Therefore, this study is designed to investigate the influence of approaches to learning on trainees' academic achievement (when both HAA and AAA combined), to find out the inconsistency findings, to fill methodological gaps, and to contribute something for the already existing knowledge in the area.

The following three basic research questions were formulated:

- What are the associations between approaches to learning and trainees' academic achievement in Polytechnic Colleges of West Hararge Zone?
- To what extent do approaches to learning predict trainees' academic achievement in Polytechnic Colleges of West Hararge Zone?
- Is there any significant difference between male and female trainees in approaches to learning and academic achievement in Polytechnic Colleges of West Hararge Zone?

Concepts of Approaches to Learning

Students approach to learning refers to the combination of motivation and learning strategies students use to address different learning tasks (Biggs, 1987). The deep approach refers to intrinsic motivation to learn (learning for pleasure) and the use of a deep learning strategy. In contrast, the surface approach refers to instrumental motivation to learn i.e., studying to avoid failure and the use of a surface learning strategy i.e., rote memorization (Trigwell *et al.*, 2013). On the other hand, Strategic approach refers to achieving motivation i.e., learning for good grades and an organizing learning strategy (Entwistle et al., 2001).

Intrinsic Motivation and Deep Approach

According to Biggs (1987) a deep approach to learning is more likely to be adopted by students with the necessary level of intention and high cognitive level to engage themselves meaningfully and appropriately with the subject matter and a preference for working conceptually. This may arise from a student's intrinsic motivation. In line with this, Ryan and Deci (2000) intrinsic motivation depict an activity done only for own satisfaction without any external anticipation.

Instrumental Motivation and Surface Approach

A surface approach to learning is defined by Biggs (1987) as an approach whereby a student learns only to pass assessment and fulfil the minimum requirements of learning. It is characterized by low level of cognitive activity. Biggs (1987) suggests that students using a surface approach to learning end up using the memorization of facts. Furthermore, Biggs suggests that there are many

factors that encourage students to use a surface approach to learning, like for instance, an intention to achieve minimal pass marks, due to a high workload; misunderstanding requirements of a course; a pessimistic view of education, high anxiety about passing and real inability.

Achieving Motivation, and Strategic Approach

Strategic approach refers to the learner’s motive to maximize performance to gain the highest achievable grades by using organized study skills and managing time wisely (Entwistle et al., 2001). Besides, Entwistle et al. (2001) coined out that, the students’ study behaviours are heavily moderated by the requirements of the assessment task but are generally highly structured and efficient. This may arise from student’s achieving motivation.

RESEARCH METHODS

In this study, mixed research approach, particularly explanatory sequential research design was employed because the researcher collected both quantitative and qualitative data sequentially in two phases. The rationale for this approach is that the quantitative data and their subsequent analysis will

provide a general understanding of the research problem (Creswell *et al.*, 2003).

Population and Sampling Procedures

This study was conducted in West Hararge Zone public Polytechnic Colleges. West Hararge Zone is one of the Oromia National Regional state’s Zone located to the East of Addis Ababa, capital of Ethiopia. West Hararge Zone has 17 administrative districts and two town administrations. Of the Zone, the study settings were Chiro Polytechnic College, Hirna Polytechnic College, Badesa Polytechnic College, Gelemso Polytechnic College, and Mechera Polytechnic.

Participants

The target population of this study was Polytechnic Colleges of West Hararge Zone. Official report from West Hararge Zone indicated that, in the Zone altogether there are five public Polytechnic Colleges with total population of 5340 (2628 male and 2712 female).

To determine the sample size of the study, Yamane formula (1967, p. 886) was used, and it is 372 (183 male and 189 female).

Table 1: Summary of study settings, population, and sample size.

N	Polytechnic Colleges	Trainees	
		Population	Sample
1	Chiro PTC	1447	102
2	Hirna PTC	997	69
3	Badesa PTC	980	68
4	Gelemso PTC	938	65
5	Mechera PTC	978	68
Total		5340	372

Data Collection Instruments

The main instrument of data collection was questionnaire. Concerning approaches to learning with its dimensions, scales were used to collect data. The scales with 52 items (Deep approach = 16

items, strategic approach = 20 items, and surface approach = 16 items) for approaches to learning was adapted from Approaches and Study Skills Inventory for Students (ASSIST) (Tait et al., 1998). The reliability (Cronbach alpha) and validity (face validity) of the instruments were successfully checked. Results presented in the following table.

Table 2: Summary of reliability test results of scales and sub-scales

		Scales and sub scales	Reliability
Overall		Approaches to learning scale	.966
Specific		Deep approach	.720
		Seek meaning	.742
		Relating ideas	.780
		Use of evidence	.726
		Interest in idea	.865
Overall		Strategic approach	.960
Specific		Organized studying	.853
		Time management	.873
		Alertness to assessment demand	.758
		Achieving	.863
		Monitoring effectiveness	.868
Overall		Surface approach	.925
Specific		Lack of purpose	.740
		Unrelated memorizing	.848
		Syllabus-boundness	.872
		Fear of failure	.752
Overall		Autonomous evaluation of academic achievement (AAA)	.878
Specific		Cognitive domain	.815
		Affective domain	.768
		Psychomotor domain	.819

Data analysis

The analysis was made using SPSS version 20. Both descriptive and inferential statistics were employed. Descriptive statistics was used to depict demographic characteristics of study participants/respondents. Pearson product moment correlation coefficient was used to determine degrees of relationships between approaches to learning and trainees' academic achievement. Linear regression analysis was employed to examine the predictive power of approaches to learning on trainees'

academic achievement. Independent sample t-test was used to identify whether or not there is gender differences between male and female trainees in approaches to learning and academic achievement.

FINDINGS

Descriptive Findings

Descriptive statistics mainly minimum, maximum, percentage, frequency, mean, and standard deviation were used to explain socio demographic data of study participants.

Table 3: Trainee participants by sex, age, and sectors in Polytechnic Colleges (N = 315).

Sex of trainees			Sectors enrolled		
Gender	F	%	Sectors	F	%
Male	155	49.2	Agricultural sector	123	39
			Economic sector	80	25.4
Female	160	50.8	Industry sector	112	35.6
Total	315	100	Total	315	100

The total number of trainee participants used for the main analysis was 315. Of these participants, 160 (50.8%) were females and 155 (49.2%) were males. In Polytechnic Colleges, field of studies are organized in to three different sectors namely

agricultural sector, economy sector, and industry sector. Accordingly, of 315 participants, 123 (39%) were from agricultural sector, 80 (25.4%) were from economy sector and 112 (35.6%) were from industry sector.

Table 4: Trainees' family education, occupation, and income (N = 315).

		F	%
Family education	Illiterate	159	50.50
	Certificate	40	12.70
	Diploma	75	23.80
	Degree	32	10.20
	Master's degree	5	1.55
	Other	4	1.25
	Total	315	100
Family occupation	Agriculture	222	70.50
	Business	54	17.10
	Employee	34	10.80
	Others	5	1.60
	Total	315	100
Family income	Low	191	60.60
	Middle	114	36.20
	High	10	3.20
	Total	315	100

Of 315 study participants, 159 (50.5%) trainees' family were illiterate, 40 (12.7%) were certificate holders, 75 (23.8%) were diploma holders, 32 (10.2%) were degree holders, and 5 (1.6%) were masters holders. Thus, data presented in the above table depicts that about 48.2%) of trainees' family are literate with 51.8% illiteracy. However, the percentage of master's holders is small, only 1.6%. Regarding trainees'/students' family occupation, 222 (70.5%), 54 (17.1%), employee 34 (10.8%) were agriculture, small business, and employee respectively.

Main findings

In this section, major results related to those basic research questions and hypotheses are presented successively.

Relationship

- *What are the relationships between approaches to learning and trainees' academic achievement in Polytechnic Colleges of West Hararge Zone?*

Pearson Correlation Coefficient was employed to examine the relationship between approaches to learning and trainees' academic achievement in Polytechnic Colleges.

Table 5: Pearson correlation coefficient of psychosocial factors, approaches to learning, respective dimensions, and trainees’ academic achievement (N = 315).

Variables	Correlation coefficients				
	1	2	3	4	5
1. Academic achievement	1				
2. Approaches to learning	.59**	1			
3. Deep approach	.79**	.72**	1		
4. Strategic approach	.78**	.71**	.46**	1	
5. Surface approach	-.13*	-.27**	.34**	-.39**	1

***. Correlation is significant at the 0.01 level (2-tailed).*

**. Correlation is significant at the 0.05 level (2-tailed).*

The Pearson correlation coefficient result indicates statistically significant positive association of trainees’ academic achievement with approaches to learning ($r(315) = .59, r^2 = 34.81\%, p < .001$). This finding implies that about 34.81% of variation in trainees’ academic achievement is linked with variation in approaches to learning.

Concerning the first research question, it is concluded that there is statistically significant relationship between approaches to learning and trainees’ academic achievement in Polytechnic Colleges of West Hararge Zone.

Prediction

- *To what extent do approaches to learning predict trainees’ academic achievement in Polytechnic Colleges of West Hararge Zone?*

Multiple linear regression analysis was conducted to determine the predictive power/ability of approaches to learning as well as its components (namely deep approach, surface approach and strategic approach) on trainees’ academic achievement.

Table 6: Multiple regression analysis of predictor variables on dependent variable (N = 315).

Predictors	Regression Coefficients	Std. Error	Beta Coefficients	T	Sig	R	R ²	F-ratio
Constant	-15.01	.84		-17.88	.00	.59	.35	107.0
Approaches to learning	.02	.01	.30	8.99	.00			2
Age	.01	.03	.01	.44	.66			
Sectors enrolled	.06	.06	.03	.93	.35			
Socio economic status	-.02	.03	-.03	-.90	.37			
Sex	-.01	.11	.00	-.01	.99			

As can be noticed from the above table (Table 6), the finding from the regression analysis indicated that the proportion of polytechnic college trainees’ academic achievement accounted for by approaches to learning is found to be 35% ($R^2 = 0.35, F(5, 310) = 107.02, P < 0.05, sig$). In the model, approaches to learning alone was found to be a significant predictors of polytechnic college trainees’ academic achievement ($Beta = .30$ for trainees’ approaches to learning). However, age, sex, socio economic status and sectors enrolled were found to be non-significant predictor of trainees’ academic achievement in polytechnic college.

Concerning the second research question, it is concluded that approaches to learning is significant predictors of trainees’ academic achievement in Polytechnic Colleges of West Hararge Zone.

Gender Differences Between Male and Female Trainees

- *Is there any significant difference between male and female trainees in approaches to learning and academic achievement in Polytechnic Colleges of West Hararge Zone?*

Independent sample t-test analysis was conducted to determine whether or not there is significance gender differences between male and female trainees in approaches to learning and trainees' academic achievement.

After collecting data from 315 study participants/polytechnic college trainees through questionnaire, independent sample t - test analysis was employed to answer this research question and hypothesis and results summarized in *Table 6* below.

Table 7: Independent sample t - test results on gender difference in the influence of psychosocial factors & approaches to learning on academic achievement (N = 315).

Variables	Descriptive statistics				Independent sample t –test analysis		
	Sex	N	M	SD	t	Df	Sig (two tailed)
Academic achievement	M	155	.09	1.88	-.93	313	.35
	F	160	.09	1.60			
Approaches to learning	M	155	198.90	22.53	1.18	313	.24
	F	160	195.94	21.98			
Deep approach	M	155	70.55	9.38	-.73	313	.47
	F	160	71.31	8.89			
Strategic approach	M	155	88.80	10.81	-.94	313	.35
	F	160	89.89	9.90			
Surface approach	M	155	39.55	16.08	2.64	313	.01
	F	160	34.74	16.19			

Descriptive results depicted in the above table (Table 7) showed that mean scores of approaches to learning for male and female trainees had slight difference. Accordingly, male trainees on average were found to have higher mean scores in approaches to learning. Descriptive result also showed that there is no mean scores difference between male and female trainees in academic achievement. Considering sub-variables, results indicated that mean scores of deep approach and strategic approach were found higher for female trainees. On the other hand, mean scores of surface approach were found higher for male trainees.

With regard to variations among trainees, descriptive results indicated that variations among male trainees in academic achievement (SD = 1.88), approaches to learning (SD = 22.53), deep approach to learning (SD = 9.38), and strategic approach (SD = 10.81) were relatively found higher than their female counterpart. But female trainees' variations in surface approach (SD = 16.19) was relatively higher than male trainees.

As can be noticed from the above table (Table 7), results from independent sample t - test showed that there is statistically significant gender difference between male and female trainees on surface

approach to learning ($t_{313} = 2.64, p < .05$). This implies that male trainees, on average, are found to be surface learner than female trainees. This means female trainees in polytechnic college do not prefer surface learning approach. However, there is no statistically significant gender difference between male and female trainees on deep approach to learning, strategic approach to learning and academic achievement.

This is because the calculated p-value or sig-values for approaches to learning ($t_{313} = 1.18, P > 0.05$) and its sub scales (strategic approach to learning ($t_{313} = -.94, p > .05$) and deep approach to learning ($t_{313} = -.73, p > .05$) are greater than alpha value ($P > 0.05$).

Concerning the third research question, it is concluded that there is no significant gender difference between male and female trainees on academic achievement and approaches to learning in general. In relation with sub-components of approaches to learning, particularly, deep approach and strategic approach to learning is no significant gender differences between male and female trainees in polytechnic colleges. However, a significant gender difference was reported for surface approach to learning.

DISCUSSION

In the current study, approaches to learning with its sub-dimensions was simultaneously considered as independent variables to examine the extent to which these variables influence polytechnic college trainees'/students' academic achievement in which both heteronomous evaluation of academic achievement and autonomous evaluation of academic achievement combined. The major findings of this study are discussed in the light of the research questions raised in the introductory part of the study.

The study reveals that the relationship between approaches to learning and trainees' academic achievement in polytechnic college was found to be positive as well as statistically significant. This means learning orientations directly associated with polytechnic college trainees' academic achievement. Concerning the magnitude of relationship between these variables, the findings uncovered from moderate correlation.

An approach to learning with its sub - dimensions and academic achievement when both HAA and AAA combined was predictor variables and criterion variable respectively. To deal with the predictive abilities of independent variables, research question was formulated. The second research question is formulated as follows: To what extent do approaches to learning predict trainees' academic achievement in Polytechnic Colleges of West Hararge Zone?

This research question was answered by employing linear regression analyses. Accordingly, it is found that an approach to learning is statistically significant predictors of polytechnic college trainees' academic achievement. The result of multiple regression analysis shows that the proportion/variance of polytechnic college trainees' academic achievement accounted for by psychosocial factors and approaches to learning is found to be 35% ($R^2 = 0.35$, $F(5, 310) = 107.02$, $P < 0.05$, sig). In the model, approaches to learning were found to be a significant predictor of polytechnic college trainees' academic achievement ($Beta = .30$ for trainees' approaches to learning).

This result is in line with various previous studies finding. For instance; Diseth (2013); Bernardo

(2003); Phan (2006); Afzal *et al.* (2010); Casillas *et al.* (2012); Krumeiri *et al.* (2013); Joann *et al.* (2015); Cetin (2016); Kolo *et al.* (2017); and Guay (2018). These scholars separately coined out that approaches to learning was significant predictor of trainees' overall academic achievement.

The third research question was formulated as follows: Is there a significant difference between male and female trainees in the influence of psychosocial factors and approaches to learning on academic achievement in Polytechnic Colleges of West Hararge Zone? This research question was answered by employing independent sample t-test. Independent sample t-test analysis result shows that there is no significant gender difference between male and female trainees in academic achievement, approaches to learning, deep approach to learning and strategic learning approach. However, significant gender differences was obtained for only surface approach to learning.

CONCLUSION AND RECOMMENDATIONS

Conclusion

On the basis of these findings the following conclusions have been reached.

- In relation with the first research question, polytechnic college trainees' academic achievement is positively and significantly correlated with approaches to learning. Moreover, the finding uncovered that polytechnic college trainees' academic achievement was found to be positively and significantly correlated with both deep approach to learning and strategic approach to learning. However, surface approach to learning and trainees' academic approach was found to be negatively and significantly associated with each other.
- In relation with the second research question, approaches to learning with its sub-dimensions namely deep approach, surface approach and strategic approach were significant predictor of trainees' academic achievement in polytechnic colleges of West Hararge Zone.

- In relation with the third research question, no significant gender differences between male and female trainees on academic achievement, approaches to learning, deep approach to learning and strategic approach to learning were obtained. However, statistically significant gender difference between male and female trainees on surface approach to learning was reported by the independent sample t- test analysis.

Recommendations

Based on the findings of this research, recommendations that have implications for intervention are forwarded for trainees, trainers, parents, and government as follows.

Analysis of Pearson Product Moment correlation coefficient indicated positive and statistically significant relationships between approaches to learning and trainees' academic achievement in polytechnic college. This finding implies that variables values move in the same direction. Therefore, by being conscious of the links among approaches to learning and their academic achievement in the college, trainees should be fully aware of their potentials and work hard to be academically successful in polytechnic college.

Linear regression analysis showed that approaches to learning along with its sub-dimensions namely deep approach, strategic approach, and surface approach significant predictor of trainees' academic achievement in polytechnic college. Consequently, in addition to successfully conducting their classroom teaching learning process, trainers should work hard to create awareness for trainees on the importance of psychosocial factors and approaches to learning in influencing trainees over all academic success in polytechnic college.

The current study finding uncovered that there is no statistically significant gender differences between male and female trainees in academic achieved, deep approach to learning, strategic approach to learning and approaches to learning in general. However, significant gender difference between male and female trainees on surface approach to leaning was obtained. Therefore, besides sending their Childs to polytechnic college, parents should

provide all the necessary supports (material support, financial support, and moral support) as much as possible and most importantly should follow up their Childs day to day academic progress. Polytechnic colleges/institutions are among widely established institutions across the country and highly promised institutions to transform county's economic development by producing low and middle level skilled man powers. Therefore, to achieve these very ambitious promises, the government should pay due attention and work aggressively from designing policies, strategies, manuals, and other necessary/relevant packages to fully implement and monitor them to improve the overall quality of teaching learning process/training in every polytechnic college across the country for both male and female trainees equally. Gender mainstreaming issues should obtain proper due attentions from any stakeholders

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