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Problems Challenging the Academic Performance of Physics Students in Higher Governmental Institutions in the Case of Arbaminch, Wolayita Sodo, Hawassa and Dilla Universities

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Abstract

This study was conducted to examine problems that challenged academic performance of physics students in higher governmental institutions in the case of Arbaminch, Wolayita Sodo, Hawassa and Dilla Universities. Questionnaires, interviews and video recordings were used to collect relevant data for the study. Data from questionnaires was compiled and analyzed using a computerized data analysis package known as Statistical Package for Social Science SPSS 17.0. The Pearson chi-square test was used to compute to test association between dependent variable and independent variables and T-test was used to find out how academic performance varied with interest to subject matter. On the other hand, ANOVA test was used to test variation of the academic performance in study sites. Besides, percentages were used for comparison of data analysis. The findings reveal the existence of a significant influence of teachers both in fostering positive or negative attitude to subject (physics) and for their poor academic performance in lower class as well as in higher institutions. On the basis of the findings, the least percentage of students (16%) indicated that their current department was the best choice for them during application for admission. Whereas the highest percentage (84%) of sample class students was enrolled in department of physics without their interest and the academic performance (ESELS result), the highest percentage (70) of students who were admitted to department of physics was below 50%. The p values 0.01 and 0.00, respectively for students who are enrolled in department of physics with best choice and without their interest, are less than alpha level of significance (0.05), which reveals that, there is statistical significance academic performance deference between students in both cases. However, the difference is more significant for those students who are enrolled without their interest. By analysis of Pearson chi-square test summary in respective study sites, the p

values 0.01, 0.007, 0.021 and 0.022 respectively are less than the alpha (α) level of significance of 0.05, which reveals that there is strong association between those variables. In the other corner of the ANOVA test analysis indicates that p value 0.01 is less than alpha level of significance 0.05. This reveals variation of academic performance of students between four higher governmental institutions where the study is made.

Keywords

Academic Performance; Institutional Facilities; Background of Students; Teaching Methodology

1. Introduction

Education is an avenue of training and learning, especially in schools or colleges, to improve knowledge and develop skills. The ultimate purpose of education is to empower an individual to excel in a chosen field of endeavor or career, and to be able to positively impact his/her environment. On the contrary, the end results of the processes of education have failed to maintain a high degree of academic distinction and excellence amongst learners and recipients of education in institutions of learning as of these days [1] [2]. Reasons that may be responsible for the prevailing circumstances could be largely remote in nature, such as educational policies on student's enrolment and admission. Nevertheless, strategies must be sorted and implemented to remedy the situation of poor academic performance in higher institutions. For last two decades, the government Ethiopia was highly working in both expansion of educational sectors in all levels and improving the quality of education in all disciplines [3]. Expansion will create new universities, establish three system support agencies, mount new courses, and triple enrolments. Reforms introduce increased institutional autonomy, curriculum revisions, new funding arrangements and student contributions by means of a graduate tax [3]. However, as some of facts have been revealed in some hard sciences, like: physics, mathematics and chemistry, especially in physics, none of the graduates' and students' attitudes towards the subjects at all levels has been declining. According to findings of researcher in this area [4], rate of enrolment in physics is the lowest and applicants who were assigned to the physics undergraduate programs were those whose mean score in Ethiopian National Higher Education Entrance Examination was the lowest compared to any other group. As this has to take into account every stakeholder, the researcher was initiated to identify challenging problems in relation to academic performance on grass root. On the basis of data type different data analysis techniques were used and results were discussed and conclusions were made.

2. Objectives

2.1. General Objective

The general objective of the study is to investigate the main challenging problems that hinder the academic performance of physics students' in higher governmental institutions in the selected areas.

2.2. Specific Objectives

- To identify the challenging problems of physics students in higher institutions.
- To formulate the relation between interest to subject and academic performance.
- To look at the association between dependent (academic performance) and independent variables.

3. Literature Review

3.1. The Concept of Poor Academic Performance

According to scholars definition [5] academic performance has been described as the Scholastic standing of a student at a given moment. This scholastic standing could be explained in terms of the grades obtained in a course or groups of courses [6], commented on this scholastic standing an argued that performance is a measure of output and that the main outputs in education are expressed in terms of learning, that is, changes in know-

ledge, skills and attitudes of individuals as a result of their experiences within the school's system. Academic performance is regarded a student's performance in an examination as being depended on his cumulative grade point average [7]. Student's success is generally judged by examination performance while the best criterion of performance is the sum of the student's academic performance in all the subjects taken. On the other hands, Poor academic performance according to Aremu [8], is a performance that is adjudged by the examinee and some other significant as falling below an expected standard. The interpretation of this expected or desired standard is better appreciated from the perpetual cognitive ability of the evaluator of the performance.

3.2. Higher Institutions Physics Students and Their Challenges to Academic Performance

According to Tesfaye Semela [4], the rate of enrolment in physics is the lowest and applicants who were assigned to the physics undergraduate programs were those whose mean score in Ethiopian National Higher Education Entrance Examination was the lowest compared to any other group. Further, their findings show unprecedented gender gap in enrollment and graduation rates. The explanations given for the low enrollment rate were inadequate pre-university preparation, weak mathematics background, and lack of job opportunity outside the teaching profession, and poor teacher qualification and pedagogical content knowledge. The cause students' failure is lack of personal confidence, emotional instability and temperamental tendency towards Extraversion. Supporting this fact [9], Al-Methen and Wilkinson reported that failure in students is due to the lack of confidence in the knowledge they possess which in turn could affect their level of activity in the classroom [10]. They also argued that student' academic problems arise from personal inadequacies such as low ability; negative self-concept, anxiety, maladjustment, environmental influences such as poor classroom conditions, curricular inadequacies, peer groups and the lack of home support. In addition to this, Birhanu Assefa, basically identified in four major areas that physics students has been facing the problems, namely: lack of interest, poor problem solving skills, poor understanding of the concept of physics, and lack of skill in practical work respectively [1]. In general, the various studies which attempt to explain academic failure do so Beginning with the three elements that intervene in education: parents (family causal factors), teachers (academic causal factors) and students (personal causal factors). Among personal variables most studied are motivation and self-concept. Motivation is considered to be the element that initiates the subject's own involvement in learning: when a student is strongly motivated, all his effort and personality are directed toward the achievement of a specific goal, thus bringing to bear all his or her resources [11].

3.2.1. Students Back Ground and Their Academic Performance

Science has been regarded as the bedrock of modern day technological breakthrough is built. Nowadays, countries all over the world, especially the developing ones like Nigeria, are striving hard to develop technologically and scientifically, since the world is turning Scientific and all proper functioning of lives depend greatly on Science. Science is a dynamic human activity concerned with understanding the workings of our world. This understanding helps man to know more about the universe. Without the applications of science, it would have been difficult for man to explore the other planets of the universe. Science comprises the basic disciplines such a Physics, Chemistry, Mathematics and Biology. Many investigations have shown that secondary school students are exhibiting dwindling interest in Science [12]. Besides, Physics as one of the Science subjects remains one of the most difficult subjects in the school curriculum according to the Nigeria Educational Research and Development Council (NERDC) [13]. Studies have revealed that the academic performance of Nigerian students in Ordinary Level Physics was generally and consistently poor over the years. Physics is an important science subject that makes immense academic demands on the students in its learning. The learning of the physics is difficult at best and almost impossible at worst but because of its enormous importance to science and technology, there is huge interest in student's achievement in physics. In the light of this, the relationship between the background and classroom environments and students achievement in physics has generated a great deal of discussion for a long time. The family background should be an environment in which children have the opportunity to succeed and be happy [14]. A conducive home influence manifests itself further in the school environment. It helps plan, execute and evaluate child's school experiences. In relation to level of maturation and mental health of the child in order to help him/her excel academically. Furthermore it has been x-rayed that some factors, which are attributed present in family contributes greatly to the academic performance of students. Among these are parental educational background, income, exposure, parental relationship with each other, strength of the

family population, religion, sex differentiation, occupation etc. the interplay of these factors in the family determines to great extent the readiness of child to learn. Never less, the influences of others factors like mental and physical disabilities can account for poor academic performance in physics. In the whole the family background being an umbrella in the initiation of the child into the world should provide favorable conditions, which will improve the academic performance of child irrespective of the constraints encountered in his academic pursuits. Most of subjects offered in secondary school have some factors, which affects their assimilation by students. Physics is no exception. Students come from different home and as a result have different challenges to contend with [15]. In addition to this, Students' educational outcome and academic success is greatly influenced by the type of school which they attend. The school one attends is the institutional environment that sets the parameters of a students' learning experience. Depending on the environment, a school can either open or close the doors that lead to academic achievement. According to Considine and Zappala the type of school a child attends influences educational outcomes [16]. On the other hand, there is evidence that, students from urban backgrounds had significantly better academic and research indicators than those from rural and remote backgrounds [17].

3.2.2. Student Interest and Their Academic Performance

We live in a world that is increasingly dependent on physics and fueled by breakthroughs in physics research. Technology continually advances, we are beginning to answer questions about the beginning and end of the universe, and we are discovering amazing things about the interaction of subatomic particles. Unfortunately, less and less students are studying physics, which is causing the general public to mitigate their understanding about scientific concepts. According to [14], students form opinions about physics in the early years of secondary school, and those beliefs become less favorable as students get older. One reason that so many people have such a lack of familiarity with physics is the fact that very few people ever actually take a physics course. Generally, a negative attitude toward a given subject leads to lack of interest and, when subjects can be selected, as in senior high school, to avoiding the subject or course. Furthermore, a positive attitude toward science "leads to a positive commitment to science that influences lifelong interest and learning in science". This is one reason why major science education reform efforts have emphasized the improvement of students' attitudes [18]. Several studies have identified a number of factors affecting students' attitudes towards science in general. These can be largely categorized as gender, personality traits, structural variables, and curriculum variables. Of these, the most significant is gender for, stated "sex is probably the most important variable related to pupils" have reported that males have more positive attitudes toward science than females [19], while others found no statistically Significant gender differences [19] [20]. On the other hands, it was initially discovered that teachers and professors have the single largest influence on students who show an interest in physics. Family members and famous physicists also had a strong amount of influence, but a student's peers had very little influence on that student's positive interest in physics [21] [22].

3.2.3. The Nature of the Subject (Physics) and Academic Performance

Physics is perceived to be a difficult course because of its abstract nature [13]. Physics subject students usually performed poorly in all level of the educational system. As observed by [23], that the trend in the enrolment and performance of secondary school students in science subjects, especially Physics assumed threatening and frightening dimension.

3.2.4. The Role of Teachers (Instructors) and Academic Performance

The role of teacher is very important in any teaching exercise especially since his/her direct participation can range from complete control over what is learned to minimal intervention. Teacher is the source of all knowledge that children acquire in class. Teacher can impact students learning in different regards. However, among this the way how he delivers the subject or methodology is directly related to learners Teachers' Method of Teaching [24]. The means or strategies employed by teachers in an attempt to impact knowledge to the learner are referred to as methodology. Therefore, teachers planning should include:

1) Choice of appropriate teaching material;
2) Choice of appropriate teaching method;
3) Intensive research on the topic to be taught;
4) Determination of the objectives for the lesson.

3.2.5. Resources (Institutional Facilities) and Academic Performance

Generally education deals with the development of humankind in so many ways. In this process, education is being given to students with different methods namely Teaching, Demonstration, Laboratory Practice, Field Study and etc. The struggle to study is the main aim of the students in the Teaching Learning processes most effective [6] [10]. However, for this achievement, students need so many infrastructure facilities at university to acquire sufficient knowledge in their field [4]. In the same time, University is a place for good training and to provide facilities to students like effective teaching, suitable atmosphere, sufficient library and laboratory. Generally Students rely on the lecture notes, reference and text books study materials at large to maintain good performance in their studies now a day's, student's number in all Universities have been increased by Ministry of education but in the same time basic facilities are not being increased at the same rate. In this scenario, the rapid growth of student's number in each University, it is observed, certainly affects the availability of basic facilities on the other hand, Poor academic achievement in Physics could be attributed to many factors among which teacher's strategy itself was considered as an important factor [25]. This implies that the mastery of Physics concepts might not be fully achieved without the use of instructional materials. The teaching of Physics without instructional materials may certainly result in poor academic achievement [26]. Also the findings stressed that a professionally qualified science teacher no matter how well trained would unable to put his ideas into practice if the school setting lacks the equipment and materials necessary for him or her to translate his competence into reality. On the other corner [27], Opined that Science is resource intensive, and in a period of economic recession, it may be very difficult to find some of the electronic gadgets and equipment for the teaching of Physics in schools adequately [28].

4. Data Analysis

Data from questionnaires was compiled, sorted, edited, classified and coded into a coding sheet and analyzed using a computerized data analysis package known as Statistical Package for Social Science SPSS 17.0. The Pearson chi-square test was used to compute to test association between dependent variable and independent variables; the resources like laboratory materials, interest and academic performance. The researcher also used the T-test to find out how academic performance varied with interest to subject matter. on the other hand, ANOVA test was used to test either the academic performance varied in four study sites namely, Arbaminch, Wolaiyta Hawassa and Dilla Universities or not. Besides to this table, pie graph and bar graphs were used to describe some data that are impossible to analyze using statically procedure like SPSS and ANOVA.

4.1. Results and Discussion

Table 1 illustrates that the highest percentage of respondents came from Dilla University (39%) followed by Arbaminch University with percentage of (22%) and the least number of respondents (19%) were from the Hawassa University. This is because the Dilla University and Arbaminch University have the largest numbers of students enrolled in physics department and the Woliyita Sodo and Hawassa Universities have low numbers (see Table 1).

Table 2 illustrates that out of the total of 145 respondents, the male students had the highest representation of about 68% and the female respondents had 32%. This was because the target population male students were greater than female one (see Table 1).

4.2. Description of the Dependent Variable (DV)

This Section describes the dependent variable (Academic performance). In this study, Academic performance was conceptualized to mean, grades obtained in tests, in course work and in examination (Cambridge University Reporter, 2003). The dependent Variable was addressed using data collected through questioner, interview and observation. on the other hand, interpretation was based national scale ranging from cumulative grade point below 2.00 used to represent poor performance, 2.00 - 2.75 good, 2.75 - 3.60 very good and above 3.6 was interpreted as distinction (highest performance).

Table 3 illustrate that student survival data from Dilla University which used as sample, considering only 2010 batch, the total number of students, 104 male and 37 female total of 141 students were enrolled physics department. However, only 61 male and 5 female totals of 66 (47%) students were graduated and 75 (53%) students were dismissed or fail to continue for different reasons.

Table 1. Description of respondents in terms of institutions.

Academic year	2009/10			2010/11			2011/12			Total			
Institutions	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	In %
AMU	12	3	15	6	2	8	7	2	9	25	7	32	22
WSU	4	1	5	6	4	10	4	11	15	14	16	30	20
HU	7	2	9	6	1	7	11	1	12	24	3	27	19
DU	8	1	9	4	10	14	15	9	24	36	20	56	39
Total										99	46	145	

Table 2. Description of respondents by gender.

Gender	Frequency	Percentage
Male	99	68%
Female	46	32%
Total	145	100.00

Table 3. Student's survival data from Dilla University department of physics: From 2010-2013 G.C.

	No of students enrolled									No of students survive				
	In 2010 G.C			In 2011 G.C			In 2012 G.C			In 2012 G.C			In 2013 G.C	
Year level	M	F	T	M	F	T	M	F	T	M	F	T	M	F
Last graduate	104	37	141	63	7	70				61	5	66	Gr	Gr	Gr
3rd year	-	-	-	37	119	156	30	70	100				30	61	91
2nd year	-	-	-	-	-	-	112	76	188				97	61	158

Source: From Dilla University school of physical sciences.

4.3. Students Perception and Influencing Factors

Figure 1 demonstrates that rating of respondent students, how they were feeling, when they heard the word physics before admission to their current department. As shown in pie chart, relatively highest percentage (29%) of respondent students were sense it as interesting field but they were scared it due to its difficult nature. On the other hand, least percentage of respondent's students (5%) were responded as undefined way (others).

Figure 2 shows that the perception of respondent students on negative influence, which can valid only who had developed negative attitude in physics, as it shown in table above, teachers were highly (51%) perceived to be highly influencing students to develop negative attitude to physics

Figure 3 depicted that, the highest percentage of respondent student (25%) responded that, the best way that initiate them to have positive interest to physics was because they were enjoyed the class that they had taken and the least percentage (4%) of respondent students were answered their reason as other factures.

Figure 4 illustrates that, highest percentage of respondent students admission points (ESELS) range lie between (40% - 50%).Whereas, the list percentage of respondents academic achievement is lie above 75% (see **Figure 4**).

Figure 5 reveals that, 13% from Arbaminch university, 10% From Woliyita Sodo University, 35% and 13%, from Hawassa and Dilla Universities respectively preferred physics as first choice during application for admission and the highest percentage of students(40%) from Dilla university enrolled with last choice (see **Figure 5**).

4.4. Association between Interest to Subject and Academic Performance

Means in **Table 4**, above, suggest that there is significant difference between academic performance of students who enrolled with their interest and who enrolled without their interest (preference) this is proved by sig = 0.01
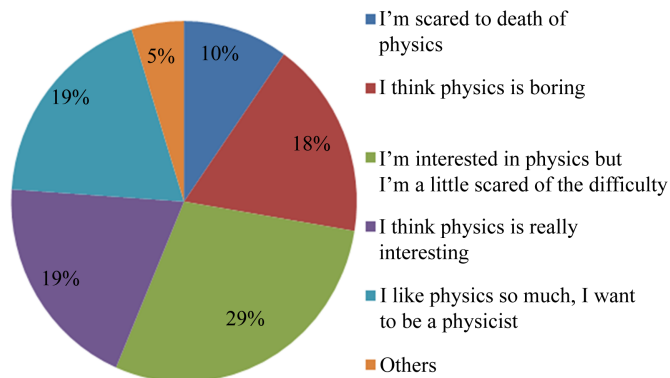
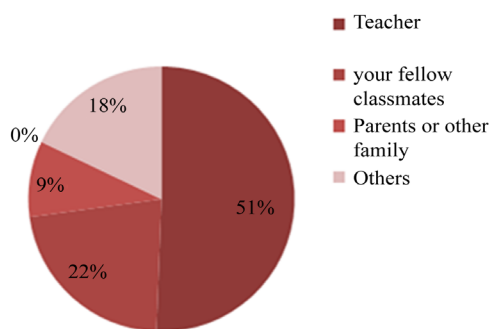**Figure 1.** The feeling students when they heard the word physics before admission to their current department.

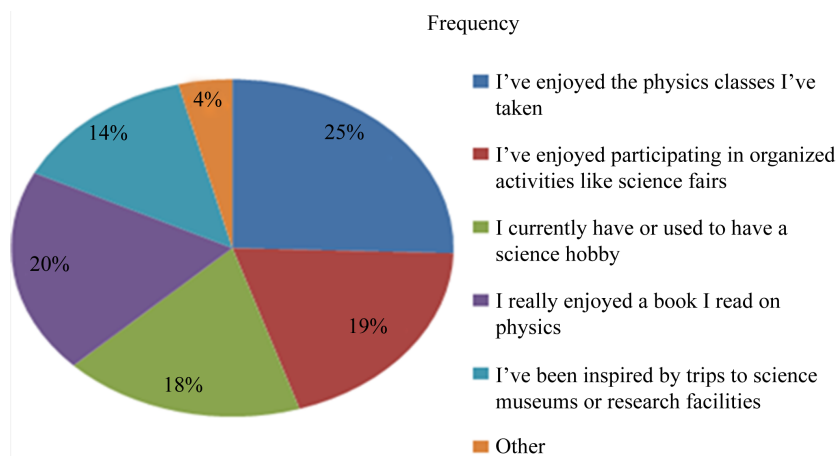**Figure 2.** Perception of students influence on negative interest (opinion in physics).

Figure 3. Responses of students on influence on positive interest (opinion in physics).

and 0.00, which are less than alpha = 0.05. The conclusion therefore there is significance difference academic performance between the students even they enrolled with their interest or without interest (preference), however, comparing the p values 0.01 and 0.00, the difference is more significant to students who enrolled without their interest.

4.5. The Association between Independent Variables and Dependent Variable (Academic Performance)

In this particular section, the association between dependent variable (academic performance of respondent stu-
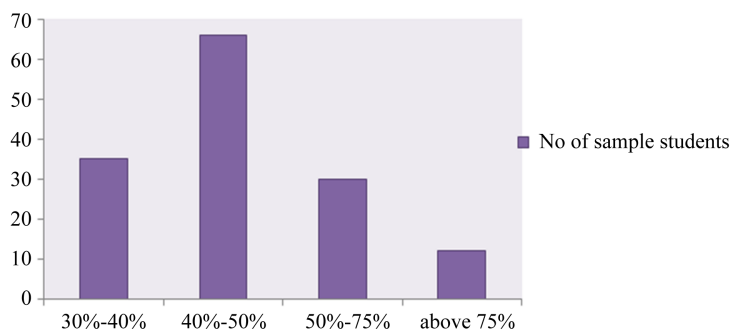
Figure 4. Admission points (ESELS) range of respondent students who enrolled 2009/10 2010/11, 2011/12.
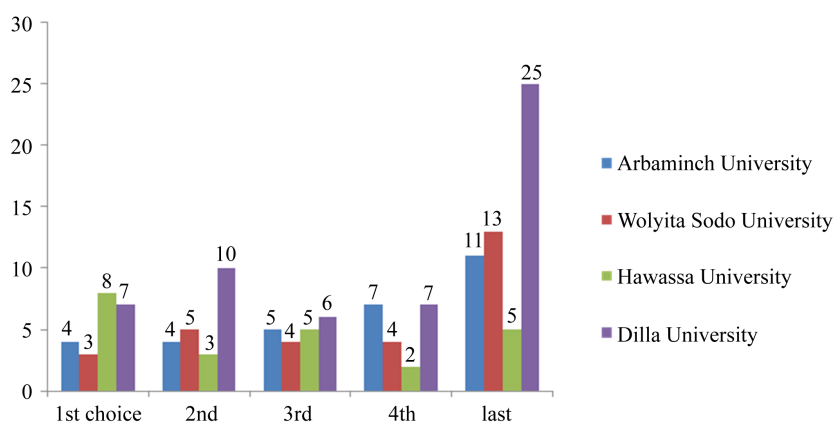
Figure 5. Position of choice of current department during application for admission.

Table 4. Summary of the one-sample T-test for the relationship between interest and academic performance.

One sample T-test	Test value = 0					
	T	Df	Sig. (2-tailed)	Mean Difference	95% confidence interval of the difference	
					Lower	upper
Academic performance of students who enrolled department of physics with 1st choice during application for admission	24.209	12	0.010	2.901538	2.64040	3.16268
Academic performance of students who enrolled department of physics with 2nd 3rd 4th and last choice during application for admission	23.635	18	0.000	2.600000	2.36889	2.83111

dents) and dependent variables: interest, resources (institutional facilities), Teachers (instructors) evaluation and way of teaching, study style of students and back ground of learners. Therefore, either those independent variables can have statistically significant effect on academic performance of students or not, were tested using Chi-square test for four study sites based on the response of respondents from respective universities. Moreover, using Chi-square can address the objectives [29].

The Chi-square summer **Table 5**, reveals that, the p value = 0.01, less than the alpha value level of significance of 0.05, therefore there is strong association between this variables, in other words this variables can statistically significance effect on academic performance.

The Chi-square summer **Table 6**, reveals that, the p value = 0.007, less than the alpha value level of significance of 0.05, therefore there is strong association between this variables, in other words this variables can statistically significance effect on academic performance.

The Chi-square summer **Table 7**, reveals that, the p value = 0.021, less than the alpha value level of signific-

Table 5. Summary of chi-square test for association between independent variables and academic performance: Dilla University.

	Variable 2 * preference cross tabulation		Preference				Total
S. No	Variables		SA	A	DS	SA	
1	Lack of resources like text books, reference materials, laboratory equipment's and others are challenging to my academic performance	Count	24	14	10	8	56
		Expected count	24.8	15.8	10.4	5	56
2	Teachers (instructors) way of teaching, evaluation systems can affect my academic performance	Count	33	17	5	1	56
		Expected count	24.8	15.8	10.4	5	56
3	My study style can affect my academic performance	Count	31	17	8	0	56
		Expected count	24.8	15.8	10.4	5	56
4	Lack of good back ground in physics when I was high school students can affect my academic performance in campus	Count	6	17	21	12	56
		Expected count	24.8	15.8	10.4	5	56
5	Lack of interest is one of the main problem in learning physics	Count	30	14	8	4	56
		Expected count	24.8	15.8	10.4	5	56
	Total	Count	124	79	52	25	280
		Expected count	124	79	52	25	280

Summary of chi-test

Chi-square tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson chi-square	55.043a	12	0.01
Likelihood ratio	62.738	12	0.01
N of VALID Cases	280		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.00.

Table 6. Summary of chi-square test for association between independent variables and academic performance: Arbaminch University.

	Variable 2 * preference crosstabulation		Preference				Total
			SA	A	DS	SDS	
1	Lack of resources like text books, reference materials, laboratory equipment's and others are challenging to my academic performance	Count	9	13	3	7	32
		Expected count	8.9	11.7	6.4	5	3.20E+01
2	Teachers (instructors) way of teaching, evaluation systems can affect my academic performance	Count	4	14	12	2	32
		Expected count	8.9	11.7	6.4	5	3.20E+01
3	My study style can affect my academic performance	Count	16	6	5	5	32
		Expected count	8.9	11.7	6.4	5	3.20E+01
4	Lack of good back ground in physics when I was high school students can affect my academic performance in campus	Count	4	15	8	5	32
		Expected count	8.9	11.7	6.4	5	3.20E+01
5	Lack of interest during enrollment is one of the main problem in learning physics	Count	11	10	4	6	31
		Expected count	8.6	11.3	6.2	4.9	3.10E+01
	Total	Count	44	58	32	25	2.00E+02
		Expected count	44	58	32	25	1.60E+02

Summary of chi-square test

Chi-square tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson chi-square	27.244a	12	0.007
Likelihood ratio	27.979	12	0.006
Linear-by-linear association	0.037	1	0.847
N of valid cases	159		

a. 1 cells (5.0%) have expected count less than 5. The minimum expected count is 4.87.

Table 7. Summary of chi-square test for association between independent variables and academic performance: Wolaiyta Sodo University.

variable 2 * Preference cross tabulation						
Variables		Preference				Total
		SA	A	DS	SDS	
1 Lack of Resources like text books, reference materials, laboratory equipment's and others are challenging to my academic performance	Count	17	4	7	2	30
	Expected count	11.6	8.2	5.2	5	30
2 Teachers (instructors) way of teaching, evaluation systems can affect my academic performance	Count	11	15	2	2	30
	Expected count	11.6	8.2	5.2	5	30
3 My study style can affect my academic performance	Count	15	6	4	5	30
	Expected count	11.6	8.2	5.2	5	30
4 Lack of good back ground in physics when I was high school students can affect my academic performance in campus	Count	8	10	6	6	30
	Expected count	11.6	8.2	5.2	5	30
5 Lack of interest during enrollment is one of the main problem in learning physics	Count	11	6	7	6	30
	Expected count	11.6	8.2	5.2	5	30
Total	Count	58	41	26	25	150
	Expected count	58	41	26	25	150

Summer table chi-square test table

Chi-square tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson chi-square	23.905a	12	0.021
Likelihood ratio	24.136	12	0.019
Linear-by-linear association	5.05	1	0.025
N of valid cases	150		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.00.

ance of 0.05, therefore there is strong association between this variables, in other words this variables can statistically significance effect on academic performance he Chi-square summer **Table 8**, reveals that, the p value = 0.022, less than the alpha value level of significance of 0.05, therefore there is strong association between this variables, in other words this variables can statistically significance effect on academic performance.

Discussion for Section 4.4, the Pearson Chi square test was used to determine the association between dependent variable (academic performance) and independent variables, in **Tables 5-8**, Chi-square test result SPSS tells us that "0" cell have expected count less than 5 and the minimum expected count is 5.0, 5.87, 5.0 and 5.24 respectively. Therefore, the sample size requirement for Chi-square test of independent was satisfied. The P values 0.01, 0.007, 0.021 and 0.022 for **Tables 5-8**, respectively which is less than the alpha (α) level of significance of 0.05 dependent variables (academic performance) respectively. Therefore, analysis of Pearson chi-square test summery in respective study sites reveals as to that there is strong association between those variables: Lack of resources like: reference materials, laboratory equipment's, Lack of interest to subject physics Teacher/instructors related problems (his/her way of teaching and evaluation system), Lack of good back ground in physics, study style of learners and dependent variable (academic performance). In other words, those variables have statistically significant effect on academic performance of students in respective higher institutions (study sites). This result was supported by interview result from respective study sites and different researchers on this area [27]-[29].

4.6. Constraints to Academic Performance of Students

In order to identify different problems, that challenging students, the questionnaire was distributed to respondent students from respective universities and they were rated as listed below table.

Table 8. Summary of chi-Square test for association between independent variables and academic performance: Hawassa University.

		Preference				
		SA	A	DS	SDS	Total
1 Lack of Resources like text books, reference materials, laboratory equipment's and others are challenging to my academic performance	Count	5	5	7	10	27
	Expected count	8.3	7.7	5.4	5.6	2.70E+01
2 Teachers (instructors) way of teaching, evaluation systems can affect my academic performance	Count	11	9	5	1	26
	Expected count	8	7.4	5.2	5.4	2.60E+01
3 My study style can affect my academic performance	Count	10	11	5	1	27
	Expected count	8.3	7.7	5.4	5.6	2.70E+01
4 Lack of good back ground in physics when I was high school students can affect my academic performance in campus	Count	9	8	5	5	27
	Expected count	8.3	7.7	5.4	5.6	2.70E+01
5 Lack of interest during enrollment is one of the main problem in learning physics	Count	6	5	5	11	27
	Expected count	8.3	7.7	5.4	5.6	2.70E+01
	Count	41	38	27	28	134
	Expected count	41	38	27	28	1.30E+02

Summry of chi-squre test

Chi-square tests	Value	Df	Asymp. Sig. (2-sided)
		12	0.022
Pearson chi-square	23.711a	12	0.011
Likelihood ratio	25.986	1	0.676
Linear-by-linear association	0.175		
N of valid cases	134		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.24.

Table 9 shows that, the response of respondent students from their respective higher institutions, one can see from table above Table, the weight of the problems is different in different higher institutions (study sites).

4.7. Variation of Academic Performance of Students

The study was initiated to test academic deference between respondent students in four study sites, the data for this purpose was taken from respective physics department (using documentary analysis), the resulting data was coded and ANOVA test was used.

Means in **Table 10**, suggest that different respondent students from different intuitions scored differently on academic performance and the highest average score (2.66) which is from Arbaminch University Whereas, the least score is from Wolayita Sodo University. On the other hand, the highest standard division (0.47550) is seen in Wolayita Sodo University ensure that, there is highest academic deference between respondent students in Wolayita Sodo University relative to other three institutions' respondent students. To confirm whether the differences were significant we consider the F value 7.335, whose significance value of 0.01, (p = 0.01) is less than alpha (0.050). The conclusion therefore is that there is significant academic performance deference between Arbaminch, Wolayita Sodo, Hawassa and Dilla Universities in which the study was conducted. The result is also supported by Considine, G. & Zappala, [26]. Who found that the type of school (institutions) a child attends influences educational outcomes.

5. Conclusions

There are various factors (problems) causing poor academic performance of physics students in higher institutions.

Table 9. Summary of identified problems from respective universities.

Variables	No of respondent students from Amu		No of respondent students from WSU		No of respondent students from HU		No of respondent students from DU	
	Frequency	(In %)	Frequency	(In %)	Frequency	(In %)	Frequency	(In %)
1. Lack of resources like: reference materials, laboratory equipment's and others	9	29	10	33	2	7	15	28
2. Lack of interest to subject physics	2	7	6	20	5	19	11	20
3.Teacher/instructors related problems (his /her way of teaching and evaluation system)	7	23	5	17	13	48	10	29
4. My study style	2	6	3	10	2	7	7	13
5. Difficulty to understand some concepts in physics	5	16	4	13	3	11	6	11
6.Others	6	9	2	6	2	7	4	7
Total	31		30		27		53	

Table 10. Summary of the descriptive statistics and ANOVA results academic performance of (2010/11) batch students from respective higher institutions.

Descriptives Academic performance	N	Mean	Std. deviation	Std. error	95% confidence interval for Mean		Minimum	Maximum
					Lower bound	Upper bound		
Arbaminch University	32	2.67E+00	0.44981	0.07952	2.50E+00	2.83E+00	1.92	3.60E+00
Wolyita Sodo	28	2.23E+00	0.4755	0.08986	2.05E+00	2.42E+00	1.7	3.83E+00
Hawassa Univeristy	29	2.26E+00	0.4454	0.08271	2.09E+00	2.43E+00	1.56	3.35E+00
Dilla University	33	2.47E+00	0.27146	0.04725	2.38E+00	2.57E+00	2.03	3.11E+00
Total	122	2.42E+00	0.44604	0.04038	2.34E+00	2.50E+00	1.56	3.83E+00

ANOVA Academic performance	Sum of squares	Df	Mean square	F	Sig.
Between groups	3.784	3	1.261	7.335	0.01
Within groups	20.29	118	0.172		
Total	24.073	121			

This study only focused on some of parameters: background of students, institutional facilities, and teachers (instructors), method of teaching and evaluation system, interest to subject matter, study style of learners. Based on the finding, the following conclusions are drawn:

- Educators (teachers) have a great role in fostering positive or negative attitude to subject matter.
- There is a significant academic performance deference between students who are enrolled in the department of physics with their best choice and who enrolled with 2nd 3rd 4th and last choice.
- The academic achievement (ESELS result) of majority (70%) of student of physics who are admitted to department of physics is less than 50%.
- The p values 0.01, 0.007, 0.021 and 0.022 for sample from DU, WSU, HU and AMU respectively are less than the alpha (α) level of significance of 0.05 dependent variables (academic performance). Therefore, there is a strong association between academic performance and lack of resources like: reference materials, laboratory equipment's, lack of interest to subject physics, teachers' method of teaching and evaluation system, lack of good back ground in physics, study style of learners.
- Institutional facilities (lack of resources) like: reference materials, well organized laboratory equipment's and computer laboratory, and lack of interest to subject matter, were the prior problem that has been seen in

WSDU, AMU and DU. However, lack of good communication between students and instructors (teachers), class missing and lack of skill full laboratory technician, was prior problem seen in Hawassa University.

There is significant academic deference between sample class of students in different study sites namely DU, WSU, HU, and Arbaminch University.

Acknowledgements

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