

**ORIGINAL ARTICLE****Action Research on Enhancing Academic Excellence in A study Program**

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**ABSTRACT**

*In this action research primary data have been used to study the academic performance of students currently enrolled in first year Physics department. Investigations revealed that a substantial number of students in Jimma University are enrolled in a course or study programme in which they have little or no interest. Questionnaires were used to ascertain preliminary claims “that lack of interest in a course of study is a fundamental factor responsible for poor academic performance”. Data collated and analysed shows that amongst the students currently enrolled in first year Physics department, only 34% selected the Faculty of Education (in which Physics department belongs) after the “grade 12” National Examination; only 27% indicated that their current department is the best choice for them; 31% chose physics as first choice during application for admission; only 17% shall be willing to choose Physics again if they are all given fresh opportunities to make fresh selection. The overall degree of excellence of the class investigated is at a level of “average performance”; and just about half (50.6%) of the class, indicated high interest in their present course of study. A concise intervention plan to enhance the academic performance of students have been developed, taking into account specific problems to be addressed; basically in four major areas, namely: lack of interest, poor problem solving skills, poor understanding of the concept of physics, and lack of skill in practical work respectively. Appropriate recommendations on steps to be taken by stake holders of educational service providers have also been included. The major limiting factor to this project is time constraints, and problems of logistics beyond our control, which have disabled the implementation of the intervention action plan.*

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## INTRODUCTION

### Paradox of Education and Excellence

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 excelling in a chosen field of endeavour 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. 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 even as observed in Jimma University, otherwise, the intended purpose of education and excellence of the educated will remain a paradox. Only by a conscientious move by all stake-holders of educational service providers can mediocrity be arrested now from students, and possibly be eliminated in the future from graduates and professionals.

### Justification

It has been observed that some students in Jimma University are enrolled in a course/programme of study in which they have little or no interest at all. Consequently, their academic performance and excellence is adversely affected. This research study is aimed at addressing the issue of concern, and to come up with possible steps/action to improve academic performances of the students.

This study is specifically focused on investigating the direct and indirect causes of poor academic performance (focusing on

the factors of interest), comparing and analysing the difference between "interested students" and "uninterested students" enrolled in the physics department and finally to develop and implement an action plan that will produce an enhanced academic performance of students.

## METHODOLOGY

### Population and Site

First year physics students in physics department, Jimma University

**Study period** 2006/2007

### research procedure

#### 1. Problem identification:

The poor academic performance and excellence due to enrolment of students in a course of study in which they lack interest was the problem identified.

#### 2. Data collection and analysis:

Data was collected, collated and analysed with the aid and use of a questionnaire.

#### 3. Proposal for action:

Based on empirical data collected, Seminars/Workshop was to be designed and organised for the students; to alert, and orient them with strategies that can impart positively on their academic interest and performance.

#### 4. Project action implementation:

Development of questionnaire, data analysis and interpretation, monitoring of strategic plan for student's improvement, stating logical process/model for improving student's performance was taken by Idehai and Solomon. And data collection, organising workshop/seminar for students' improvement, collection of feedback, report writing and final presentation was taken by Birhanu and Getnet.

**5. Evaluate action:**

Further data of actual examination grades of students will be obtained from previous records and present studies of students-in-focus. Present and previous examination grades shall be compared and analysed in order to access the effects of action-plan implemented on the sample-class of interest.

**6. Recommend change:**

A logical, sequential course of activities shall be proposed, and recommended to generally use as a model by teachers/instructors/departments to use for enhancing academic excellence, and to help students enrolled in a programme in which they lack or have lost interest.

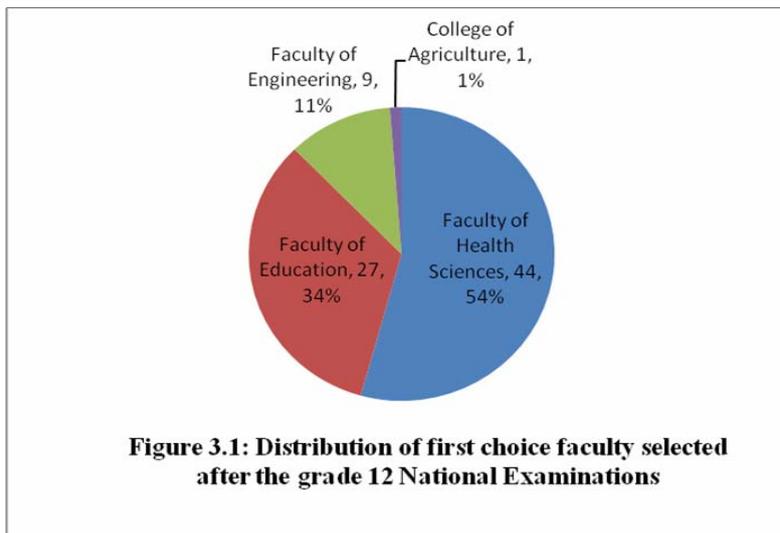
developed to collect primary data information on first year students in physics department. The sample population of the surveyed class was 81 students. Key elements of interest investigated through the questionnaire were:

1. First choice faculty selected after the “**grade 12**” National Examination,
2. Number of students who answered “Yes” or “No” of current department as best choice,
3. Position of choice of current department during application for admission,
4. Best choice of students selected, who are presently enrolled in physics department, if given an opportunity to change their course of study,
5. Personal academic evaluation of students investigated.

**RESULTS AND DISCUSSIONS**

In order to get a realistic perspective of the subject of focus, a questionnaire was

**3.1 First choice faculty selected after the “grade 12” national examination**



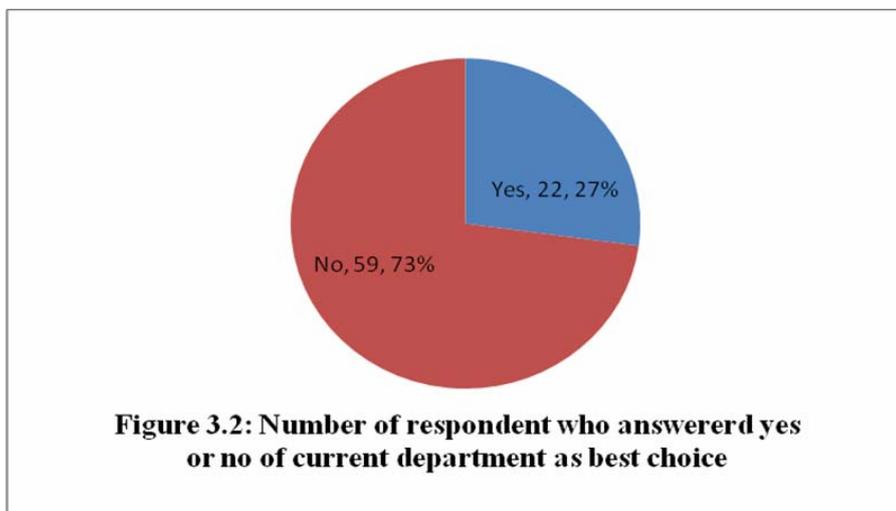
**Figure 3.1: Distribution of first choice faculty selected after the grade 12 National Examinations**

In the sample class of 81 students, Figure 3.1 shows the distribution of first choice faculty selected after the grade 12 National Examinations; that is, Faculty of Health

Sciences, 44 (54%); Faculty of Education, 27 (34%); Faculty of Engineering, 9 (11%); and College of Agriculture, 1(1%) respectively. Those

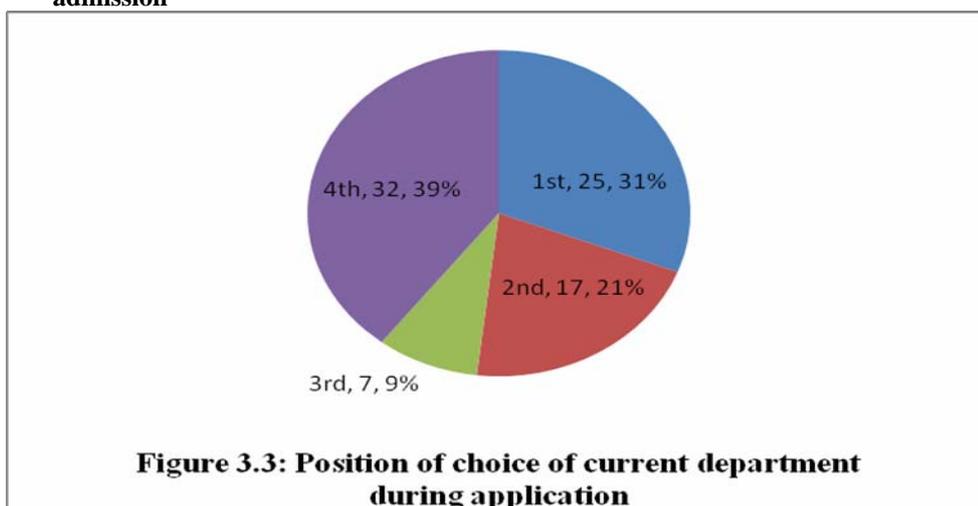
actually interested in studying Physics are the Faculty of Education.  
still a fraction aspect of the 34% who chose

### 3.2 Number of students who answered “yes” or “no” of current department as best choice



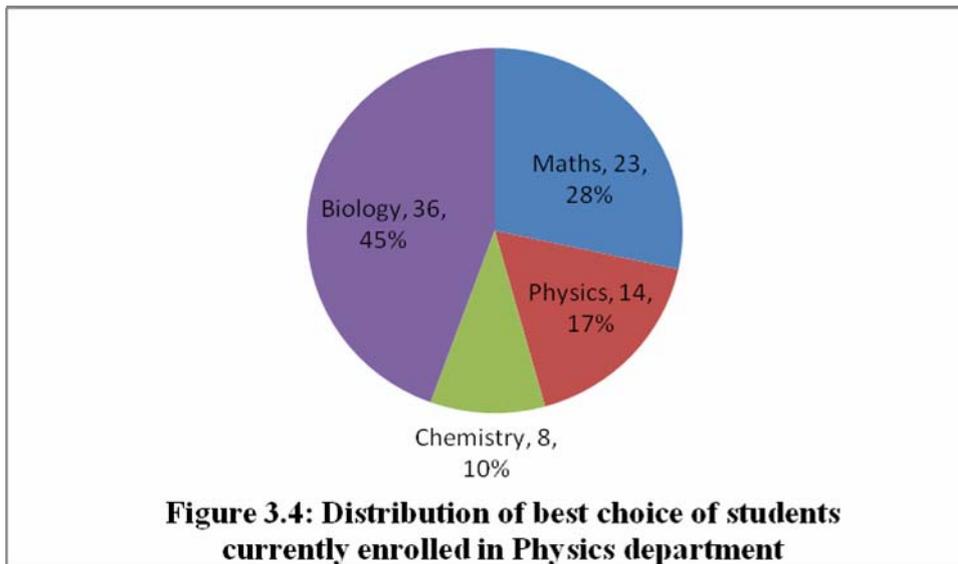
The students in the sample class were asked a closed-ended question to respond “Yes” or “No” on whether their current department is the best choice for them; Figure 3.2 shows that only 27% of respondent answered yes, while the remaining 73% answered no. This goes to show the extent of lack of interest of the total students currently enrolled in first year physics department.

### 3.3 position of choice of current department during application for admission



When the students were requested to rank their current department, which is physics, in accordance to preferred choice during application for admission; the data shown in Figure 3.3 revealed that 31% of the sample class chose physics as first choice, 21% chose it as second choice, 9% chose it as third choice, and 39% chose it as their 4<sup>th</sup> choice respectively. That is, only 31% of the sample class can be said to be comfortably enrolled in physics department.

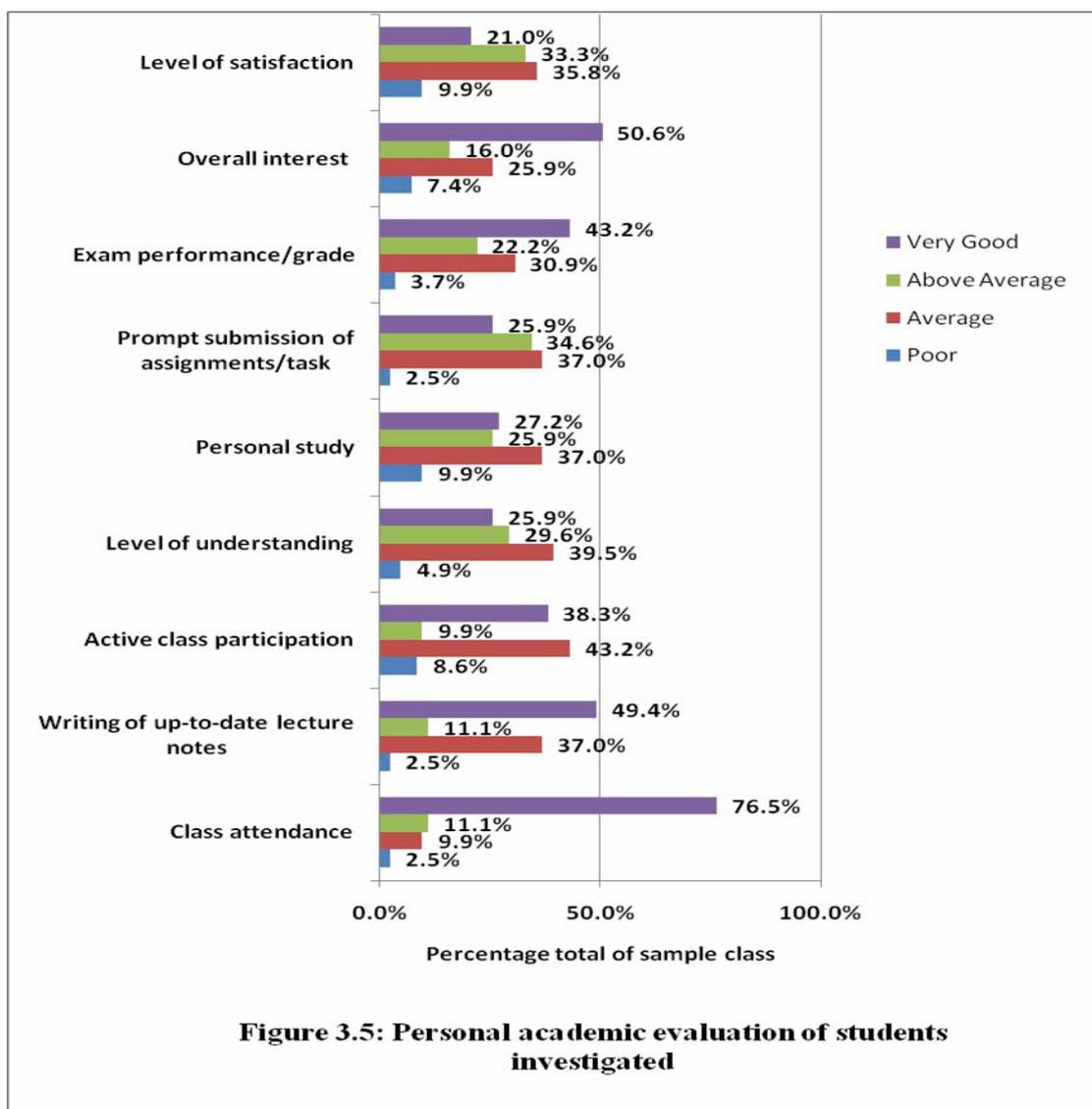
### 3.4 Choice of students if given the opportunity to change their course of study



If offered the opportunity to choose all over again, the best choice that will be chosen by the sample class of 81 students is distributed as shown in Figure 3.4 above.

28% shall choose Mathematics, 17% shall choose Physics, 10% shall choose Chemistry, and 45% shall choose Biology respectively.

3.5 Personal academic evaluation of students investing



Students were asked to personally evaluate specific areas of academic activities, in order to obtain a general reflection of the degree of conduct and excellence of the surveyed class. The Figure 3.5 shows the

measure of performance of the students, ranging from poor, average, above average and very good respectively of the areas queried.

**Table 3.1: Summary of personal evaluation indicating areas of maximum values**

<b>Areas evaluated</b>	<b>Maximum value of evaluation indicated</b>
1. Class attendance	Very good (76.5%)
2. Writing of up-to-date lecture notes	Very good (49.4%)
3. Active class participation	Average (43.2%)
4. Level of understanding	Average (39.5%)
5. Personal study	Average (37.0%)
6. Prompt submission of assignments/task	Average (37.0%)
7. Exam performance/grade	Very good (43.2%)
8. Overall interest	Very good (50.6%)
9. Level of satisfaction	Average (35.8%)

The summary of the responses displayed in Figure 3.5 is tabulated in Table 3.1, showing the maximum values of the areas evaluated. Areas assessed as very good are class attendance, writing of up-to-date lecture notes, exam performance/grade and overall interest respectively; the critical element in the four areas listed as very good that can be used to determine academic success is the exam performance/grade. Other key elements that can determine the degree of academic performance are; active class participation, level of understanding, personal study, and prompt submission of assignments/task, which incidentally were all rated as average. Therefore amongst the five key areas to measure the degree of success, only one (1) was rated as very good, while four (4) were rated as average. This goes to show that the overall degree of excellence of the class investigated is just at a level of average performance. Furthermore, just about half (50.6%) of the class investigated

indicated high interest in their present course of study.

#### **Research Project Intervention Plan and Changes**

Based on empirical data collected, an intervention plan was designed for the students; to alert, and orient them with strategies that can help impart positively on their academic interest and performance. The structured plan is shown in Table 2.2 below. After a better understanding of the magnitude of the factors affecting academic performance of the students; problems to be addressed were categorised into 4 major areas, namely: lack of interest, poor problem solving skills, poor understanding of the concept of physics, and lack of skill in practical work respectively. The actions to be taken by respective members of the project group are also highlighted in the table.

**Table 2.2: Action Plan on Enhancing Student's Academic Performance**

<b>S.No</b>	<b>Identified problems</b>	<b>Action to be taken</b>	<b>Responsible Persons</b>	<b>Date to be carried out</b>
1	Lack of interest	<ul style="list-style-type: none"> <li>➤ Exposing students to latest developments, and career prospects in physics.</li> <li>➤ Organise group participation in collecting physics bulletins, magazines, news letters etc., and other international collaborations.</li> </ul>	Birhanu, Solomon, Getnet and Ohijeagbon	From 7 <sup>th</sup> June 2007 to The end of their graduation
2	Poor problem solving skills	<ul style="list-style-type: none"> <li>➤ Organise study and tutorial groups to continuously engage in collaborative problem solving exercises and activities.</li> </ul>	Birhanu, Solomon and Getnet	From 7 <sup>th</sup> June 2007 to the end of the semester
3	Poor understanding of the concept of physics	<ul style="list-style-type: none"> <li>➤ Helping the students to understand the basic fundamentals of physics.</li> <li>➤ Guiding them to read about concepts, theories and applications of physics before trying to solve problems.</li> </ul>	All group members and course instructors	From 7 <sup>th</sup> June 2007 to the end of the semester
4	Lack of skill in practical work	<ul style="list-style-type: none"> <li>➤ Acquaint students with several lab apparatus and experimental demonstrations</li> <li>➤ Forming groups to conduct laboratory exercises.</li> </ul>	Birhanu, Solomon, Getnet, Ohijeagbon, and lab technical assistants	From 7 <sup>th</sup> June 2007 to the end of the semester

And after the intervention of action plan on enhancing academic performance of first year physics students the following changes were observed:

- Problems solving skill change: They got the basic skill of handling problems and start giving time on exercising problems.
- Students start appreciating physics when they just begin relating the theoretical aspects of physics with the experimental value in physics laboratory and demonstration room.
- And finally students develop group working and get going helping each other in solving problems and doing practical experiments.

## **CONCLUSIONS AND RECOMMENDATION**

### **Conclusions**

Studies have shown from analysed data, that amongst the students currently enrolled in first year Physics department, only 34% selected the Faculty of Education (in which Physics department belongs) after the "grade 12" National Examination; only 27% indicated that their current department is the best choice for them; 31% chose physics as first choice during application for admission; only 17%

shall be willing to choose Physics again if they are all given fresh opportunities to make fresh selection. The overall degree of excellence of the

class investigated is at a level of “**average performance**”; and just about half (50.6%) of the class, indicated high interest in their present course of study.

The figures itemised above have clearly shown beyond any iota of doubt that a very large percentage of students currently enrolled in first year Physics department lacks interest in the course, and as such, personal motivation will be at its lowest, and overall academic performance should not be expected to rise above average as already observed from analysed data.

In order to remedy the current position, a well structured intervention plan have been developed for implementation, taking into account specific problems to be addressed; basically in 4 major areas, namely: lack of interest, poor problem solving skills, poor understanding of the concept of physics, and lack of skill in practical work respectively.

The detailed analysis of this plan is contained in Table 2.2. Unfortunately, time constraints, and problems of logistics beyond our control makes us unable to perform the implementation of the intervention action plan in a perfect way.

### RECOMMENDATIONS

1. The intervention action plan developed in this research project should be implemented in a course of study in which prevailing factors affecting academic excellence are similar to those herein identified.
2. Educational policies on admission and enrolment of students into institutions of higher learning should be reviewed to allow students choose courses which they are best suited and prepared for.
3. Sufficient guidance and counselling should be given to students in secondary schools prior to their final examinations

and selection of courses of interest into institution of higher learning.

4. Adequate orientation on career potentials and prospects of various courses studied in institutions of higher learning should be elaborated to students as soon as they are admitted.
5. Teachers and instructors should ensure they build self-confidence in their students.
6. Students should be regularly motivated and encouraged to always perform at their best possible.
7. Students should be empowered with effective reading and studying skills.
8. Students should be thought to develop personal laudable goals and to maintain a right attitude and focus.
9. Students should be thought to effectively manage his/her personality, time and resources.
10. Students should be thought on how to manage failures and successes to his/her advantage.

### ACKNOWLEDGEMENT

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