The Effectiveness of Learning Intervention Program among First Year Students of Biomedical Science Program

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Abstract

Effective learning intervention should include early detection of problems in academic performance, strategies to help students develop better approaches for academic success and facilitation of self-directed learning. While the program incurred some hidden and indirect costs, the intervention can be significant, delivering the wanted result through the remediation service. The samples were 21 first year students who had poorly performed in their mid-semester assessment with average Grade Point Average (GPA) of 1.86±0.46. The students were given an intervention by giving motivational talks followed by Focus Group Discussion. They were also asked to self-evaluate their own weaknesses. They were divided into smaller groups and an academician was assigned to each group to assist and guide them by meeting the students regularly as part of the Academic Assistance Program. Their final examination showed an encouraging improvement by displaying an average GPA of 2.74±0.30. As the conclusion, learning intervention program whose main objective is to improve the academic performance of disadvantaged students helped them to improve and should be considered as a routine tool in the higher learning education.

Keywords: learning intervention, assessment, learning skills, academic assistance program;

1. Introduction

Six to fifteen percent of health professions students experience academic difficulties and these percentages are increasing (Frensell 2008, Williams 2006). Poor academic performance and scholastic failure can result in students becoming less motivated. Although most faculty members feel a sense of commitment to helping their students succeed, some feel that academic progression is the students’ responsibility and that faculty members should not have to remediate students at the graduate or professional level.

The problem is not limited to the health professions; the prevalence of academic difficulty in higher education is staggering. The National Committee on Excellence in Education of the United States of America reported that although more students are entering college, more of them are not progressing (Thomas 1999). Theoretically, the
The best way to evaluate learning effectiveness is to measure improvement on achievement tests (Cashin 1990). In a university context, this means measuring changes in performance on final examinations. Higher institutions in Malaysia measure the performance of the students using Grade Point Average (GPA) which will be cumulated from the first semester until they finished all the required courses.

Academic assistance is often required at transition points from high school to undergraduate training and from undergraduate to graduate or professional training (White 2007). Many students finish high school and enter undergraduate studies with inadequate learning skills (Breneman et al. 2004). Although some students entering professional programs have an inadequate science foundation, they lack appropriate behavioural aptitudes such as drive, motivation, inquisitiveness, and curiosity. Academic assistance programs are designed to help students overcome academic difficulty and to fulfil the need for learning intervention. The aim of this study is to evaluate the effectiveness of learning intervention program towards poorly performed first year students of the Biomedical Science program in improving their GPA. The idea for intervention program was adopted from Sipon (2001), however, the evaluation form was designed by a group of academicians in Department of Biomedical Science.

2. Methodology

The sample population was the first year students of Biomedical Science program and 21 students who were in the last quartile of GPA for their second mid semester assessment were selected. These students had achieved GPA of less than 2.50 with GPA ranging from 1.21 to 2.43 in their mid semester assessment with an average GPA of 1.86±0.46.

Firstly, the students were gathered and briefed about the intervention plan. Consent was obtained from each of the students to attend the program. A one-day program was designed to carry out the intervention. As an intervention action in Academic Assistance Program, two motivational talks were arranged and delivered to the students by academicians from the Department of Biomedical Science prior to the Focus Group Discussion (FGD). A group of volunteers from the academics of the department was appointed as facilitators to assist each group of students. The students were divided into 3 groups which consisted of 7 students. During FGD each student was asked the factors that might have contributed to his/her poor performance in the mid semester assessment. The facilitators then noted all of the factors and later evaluated to identify the main contributing factors to the poor performance of the students. The facilitators were asked to conduct at least two meeting sessions before the students sat for their final examination to boost their morale.

The contributing factors were tabulated and displayed in frequency table while the comparison between the GPA of the mid and final semester results was evaluated using paired-t test after the assumptions for parametric test were not violated.

3. Results

Table 1 summarizes the factors that contributed to the poor performance of the students during FGD. From the results, the highest factor that contributed to the poor performance was student attitudes towards learning. When requested to list the factors which make them performed badly in the mid semester assessment, all of the students had declared their bad attitudes (56.25%) with lazy, lost interest and lost focus in study as the top three contributing factors.

Under the skill section, most of the students stated the top three factors viz. no learning skill, didn’t know how to take notes and cannot differentiate the important facts, contributed to their weak performances in the mid semester assessment (32.81%). Lack of conducive infrastructure was also reported as factors affecting their performances. Lastly, there were two other reasons that contributed to the poor performance of the students including personal and financial problems.
Table 1. Factors contributed to the poor performance during second mid-semester assessment of the first year students of the Biomedical Science program

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Frequency (Percentage)</th>
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</thead>
<tbody>
<tr>
<td>Attitude</td>
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<tr>
<td>1. Lazy</td>
<td>36 (56.25%)</td>
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<td>2. Not interested</td>
<td></td>
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<td>3. Lost focus</td>
<td></td>
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<tr>
<td>4. Enjoy over the weekend</td>
<td></td>
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<tr>
<td>5. Attached to social websites</td>
<td></td>
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<td>6. Cannot develop interest for certain subject</td>
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<tr>
<td>7. Too much of complacency</td>
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<td>8. Ego</td>
<td></td>
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<tr>
<td>9. Entertainment</td>
<td></td>
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<tr>
<td>10. Last minute preparation for examination</td>
<td></td>
</tr>
<tr>
<td>Skill</td>
<td></td>
</tr>
<tr>
<td>1. No learning skill</td>
<td>21 (32.81%)</td>
</tr>
<tr>
<td>2. Do not know how to take notes</td>
<td></td>
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<tr>
<td>3. Do not know what is important in the lectures</td>
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<tr>
<td>4. Language barrier</td>
<td></td>
</tr>
<tr>
<td>5. Unprepared when attending the lectures</td>
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<tr>
<td>6. Inconsistent in studying</td>
<td></td>
</tr>
<tr>
<td>Infrastructure</td>
<td></td>
</tr>
<tr>
<td>1. No proper place to conduct group discussion</td>
<td>5 (7.81%)</td>
</tr>
<tr>
<td>2. No study room</td>
<td></td>
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<tr>
<td>3. The residential college did not provide a conducive and favorable environment</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
</tr>
<tr>
<td>1. Personal problems</td>
<td>2 (3.13%)</td>
</tr>
<tr>
<td>2. Financial problems</td>
<td></td>
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</tbody>
</table>

Graph 1 shows the comparison between mid semester assessment and final examination results of each student. Twenty one (21) students were evaluated and all of them showed an increased GPA in the range of 0.46 and 1.28. This indicated that the students had the awareness and made appropriate attempts in improving their grades.

Graph 1 Comparison of individual GPA results between mid-semester assessment and final examination during second semester among poorly performed first year students of the Biomedical Science program (n=21)
Grah 2 shows the average GPA of mid semester assessment compared to the average of final GPA. The students’ average GPA had increased from 1.86±0.46 to 2.74±0.30. An encouraging increased of 0.88 between the mid semester assessment and final examination was significantly different at $t(20)=16.04$, $p<0.001$. The effect size was calculated using Cohen’s $d$ for inferential testing and it was found at 2.55 which can be described as large.

Graph 2 Average GPA of mid semester assessment compared to average GPA of final examination for second semester of first year Biomedical Science students

4. Discussion

Colleges and schools of health programs expect the students entering their courses to perform as adult self-learners, but substantial evidence suggests that adequate skills are not developed in their earlier years (Fjortonoff 2006). Therefore, the much needed intervention at the earliest possible is crucial for the students to gain good GPA. A good GPA also ensures the success of the students especially in securing the right career path.

The use of Academic Assistance Program proved useful as the students have an academician assigned to them that not only act as the facilitators but also as motivators and served as ‘a shoulder to cry on’ during their stressful periods. The meeting sessions conducted at least twice prior to the final examination was really helpful and beneficial as the students took these opportunities to consult and revise their lessons with the personal tutors. Above all, the meeting sessions essentially changed the attitudes of these poorly performed students as the facilitators constantly reminded them not to take up the bad attitudes again and to be a better person in order to achieve a better GPA.

The results of this study support what Maize et al. (2010) had stated in his study that the immediate beneficiaries of intervention program are the students. This process provides added learning opportunities for students to enhance their success rate in the curriculum. A closer look at intervention program suggests that benefits of this process go beyond the students alone. Indirectly, the educating institution also reaps both immediate and long-term benefits from the students’ success.

According to Rodriguez-Planaz (2010), there are a number of reasons why a student might need learning intervention. Some students attend schools of poor quality and did not receive adequate grounding learning skills to prepare them for college or life. Other students may have been under the parents or guardian watchful eyes making them relying on other individuals that contributes to the lack of life-long skill development. To some individuals, pressures from these ‘too much attentions’ syndrome had led to learning disorders and other issues which have
impaired their ability to learn on their own. Learning interventions address these problems by giving people the opportunity to realize their problems and develop skills which they can use to pursue better educations and career goals.

The study indicated that the key of success for this learning intervention relies on the aggressive early detection of the problems faced by these poorly performed students. The earlier detection was made, the better for the academicians to impart the learning skills required by these students. However, the Academic Assistance Program also plays a vital role in making sure these students revolutionize their attitudes from the bad ones to the good ones. In order to achieve the success, dedicated and committed department academicians who are willing to help the students to be excellent person is a prerequisite. Otherwise, no learning intervention would be successful without these people.

However, it is difficult to dictate a generalized intervention policy or to describe a turnkey approach (Maize et al. 2010). Students’ success is affected by many factors including pre-professional preparation by the academicians and administrators of the schools or faculties, class size, class diversity, language issues, motivation, teaching skills, learning skills and diagnosis of learning problems. All of these factors should be taken into consideration when designing intervention program because the program is not ‘one size fits all’. The most successful intervention programs would be the one that tailored to the individual student.

5. Conclusion

The learning intervention program has been found to be really useful in improving the first year students of Biomedical Science academic performance. Aggressive early detection should be conducted during the students early days in the program as this will help them to adopt a better attitude. This intervention has to be topped up with continuous Academic Assistance Program so as to provide assistance to the students especially during the transition period from secondary school or matriculation to the undergraduate education.

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References


