

Progression of Selection Rate of Information and Communication Technology Subject in GCE Advanced Level at Ampara District

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Abstract. Information and Communication Technology (ICT) is a requisite knowledge to meet this digital era. It facilitates human life in all areas and fields connected with our day to day life activities. Thus, the Sri Lankan government introduced ICT subject as a combination for all GCE Advanced Level (A/L) stream in the year 2011 and introduced a new stream call Technology stream in 2015. This study analyzed the success state of these activities of government by measuring the interest of students in ICT subject selection and progression of selection of ICT as one of the main subjects on GCE A/L Examination at Ampara district. Data were collected from relevant bodies of five educational zones namely Akkaraipattu, Ampara, Kalmunai, Sammanthurai and Thirukkovil of Ampara district. Analysis results proved that, the selection rate of ICT subject has a remarkable improvement in the year 2015 and it has a modest increase from the year 2015 because of the arrival of Technology stream. Moreover, more than 60% of students are getting success in their ICT subject on GCE A/L examination every year. In addition, the Engineering Technology students are more desirable to select ICT subject as a combination with other two major subjects than the Biosystems Technology students. Also, more than 50% of technology stream students select ICT as one of the main subjects even though it is being one of the basket subjects with other ten optional subjects. The analysis results enlighten that there is a fast progression in the selection of ICT subject in GCE A/L at Ampara District.

Keywords: ICT subject, GCE A/L, Technology Stream, Engineering Technology, Biosystems Technology.

1 Introduction

Information and Communication Technology (ICT) is a vast discipline which combines Information Technologies (IT) with Communication Technologies. It facilitates human life in all areas such as education, health, industry, business, agriculture, governance and many other fields connected with our day to day activities.

Sri Lankan school education system provides education to primary and secondary level students to improve their knowledge and skills to create a bright future and to become good educated and talented citizens of the nation. Moreover, the education system uses a filtering process call GCE Advanced level examination at the end of the 13th year of school education to give more knowledge in depth at higher educational institutes. When comparing computer literacy with educational achievements, there is a positive relationship between them. For

example, the computer literacy is 53.4% for those who have attained G.C.E. (A/L) or above while it is only 0.9% for those have had no schooling [1]. Hence, government interested to include ICT related subjects into the school syllabus, as a result of the GIT examination which introduced on August of 2005 in Grade 12, and also ICT is included in technical subjects' pool of GCE ordinary level [2] as a purpose to meet today's digital era.

Moreover, the ICT subject was considered as one of the major subjects in GCE Advanced level apart from the GIT and GCE O/L examination. Even though it's a major subject only a few students select ICT while comparing with other subjects. In addition, the government introduced a new stream call "Technology stream" From 2013 (GCE A/L on 2015) to produce technologically skilled citizen who capable to meet new digital era and industrial requirement. Thus, the ICT was included as one in the pool of third optional subject.

Technology stream contains two subdivisions call Biosystems Technology and Engineering Technology. The student who follows Technology stream should take Science for Technology as a compulsory subject. They can take either Engineering Technology or Biosystems Technology as the second subject. And for the third main subject, Sri Lanka education systems offers a pool of basket subjects with eleven (11) different subjects.

"In particular, ICT has impacted on educational practice in education to date in quite small ways but that the impact will grow considerably in years to come" [3]. However, to analyze the success state of these activities of government, this study tried to measure the interest of students in ICT on GCE A/L, progression of its preference rate throughout the years, and the factors influence on it. Also, the effects need to be compared with the arrival of Technology stream. Therefore, this study focuses on the selection of ICT subject in GCE A/L, especially on the Technology stream.

2 Objectives

The objective of this study is to analyze the progression of selection rate of information and communication technology (ICT) subject in GCE advanced level at Ampara district, especially with Technology stream.

3 Methodology

This research was mostly depended on the reliability of data. Data were collected from relevant statistical documentation of authorized departments such zonal and divisional education offices, and Government schools, especially the schools which are offering ICT as a subject in GCE A/L. Some data were collected as raw data then they were organized to a useful format which is suitable to the requirement. In addition, part of the data and information were collected by interviewing the higher-grade officers of above-mentioned authorized departments.

Ampara district includes a total of seven (7) educational zones namely Akkaraipattu, Thirukkivil, Sammanthurai, Ampara, Kalmunai, Mahaoya and Dehiyathakandiya. Among these seven zones, this study provisionally focused only on five (5) zones of Thirukkivil, Sammanthurai, Ampara, Kalmunai and Akkaraipattu as it was able to collect the sufficient information from these zones without failing to ensure trustworthy to get more accurate result. Eighteen (18) educational divisions which is having ninety (90) GCE A/L schools were included in this study.

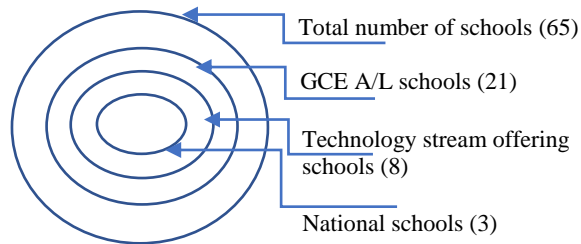


Fig. 1.Schools in Kalmunai Educational zone

When look at the Kalmunai educational zone, which includes five (5), divisions. These divisions include a total of 65 schools. Among these 65, there are 21 schools offer GCE A/L education which consists of three (3) national schools, and 8 Technology Stream offering schools (Fig. 1).

Likewise, the following Fig. 2, 3, 4 and 5 show the count of available schools of other four (4) educational zones of Ampara, Sammanthurai, Thirukkivil and Akkaraipattu respectively.

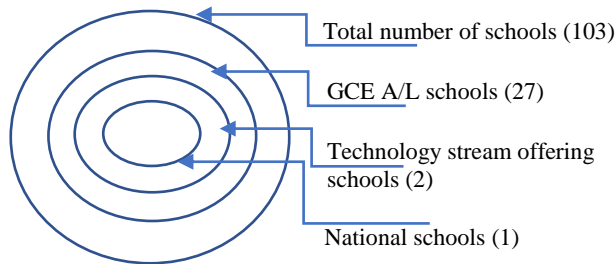


Fig. 2. Schools in Ampara Educational zone

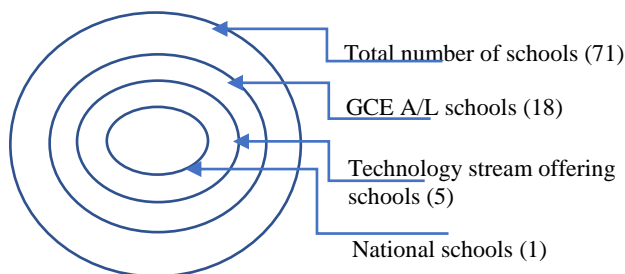


Fig. 3. Schools in Sammanthurai Educational zone

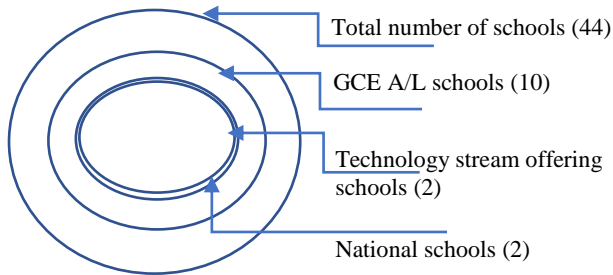


Fig. 4. Schools in Thirukkovil Educational zone

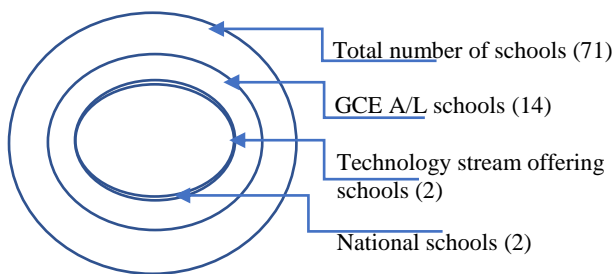


Fig. 5. Schools in Akkaraipattu Educational zone

Collected data were tabulated in different ways to analyze in different angle to achieve the objective. For the analysis part, spreadsheet application was used and some preliminary analyses were done manually, especially some recent examination results. From the above figures, it can be noticed that all the national schools are offering Technology stream in GCE A/L. Moreover, all the national schools are offering ICT subject as an optional combination subject for the other streams like commerce, Arts, Biological Science, Physical Science as well. Rather than national schools, some other GCE A/L grade schools are also offering ICT subject as an optional combination subject for other streams.

Schools are offering A/L ICT optional subject from the year 2011 batch [5] and the Technology Stream started for 2015 batch of A/L students [6]. Most of the Technology stream schools were visited to get more information about the technology stream in detail. The collected data and information from the various resources, the analysis was done to get the flow of the selection rate of ICT subject and concluded some opinions based on the results of the analysis.

4 Results and Analysis

The percentage of students who selected the ICT subject (as an optional subject from other stream or ICT subject of Technology stream) in GCE A/L was measured based on the collected data shown in Table 1. The table contains the data from 2011 to 2019 GCE A/L examination years and the analyzed results are represented as Fig. 6. The following equation used to calculate the selection rate of ICT subject on each year.

$$\text{Selection rate} = \frac{\text{No. of ICT students} \times 100}{\text{Total no. of students in GCE A/L}}$$

Table 1. Count of students who selected ICT subject and Total students (from 5 zones)

Year	No. of ICT students count	Total no. of GCE A/L students	ICT selection rate (%)
2011	18	2119	0.849
2012	36	2840	1.268
2013	12	3752	0.32
2014	17	4964	0.342
2015	251	4890	5.133
2016	333	4896	6.801
2017	511	6650	7.684
2018	426	4645	9.171
2019	596	5336	11.169

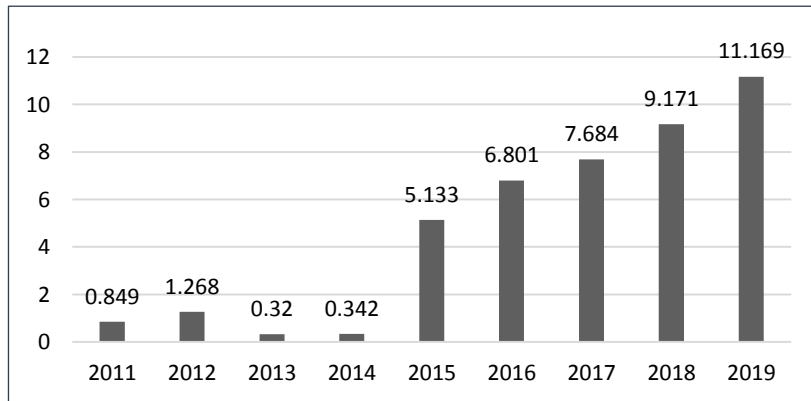


Fig. 6. ICT subject selection rate (%)

This Fig. 6, clearly explains that there is a dramatic increase in the selection of ICT subject in the year 2015 and a modest increase from year 2015 to the year 2019 by GCE A/L students. It is pretty clear that the reason for the dramatic increase in the selection of ICT subject in the year 2015 was the new arrival of Technology stream.

As second analysis, the selection percentage of total ICT student in Technology stream was calculated from the year 2015 to 2019 (Table 2) and the result is represented in Fig. 7. The results show that there is no significant change in the selection of ICT in Technology stream from the year 2015 to the year 2019. But more than 50% of technology students selected ICT as one of the main subjects, even though it is one of the optional subjects in a pool with eleven (11) subjects. Also, it is noted that there is a dramatic change in selection rate (60.846 %) in the year 2019.

Table 2. ICT subject selection in Technology Stream

Year	Total no. of students in Technology stream	No. of ICT students in Technology stream	ICT subject selection rate (%)
2015	314	174	55.414
2016	491	255	51.935
2017	625	345	55.2
2018	735	345	46.939
2019	779	474	60.847

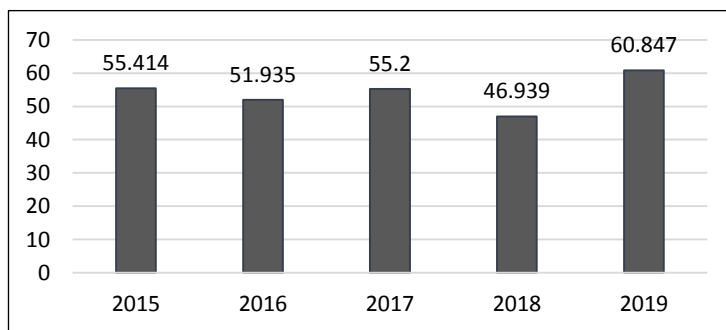


Fig. 7. ICT selection in Technology Stream

Another analysis was done to find out the passing percentage of students in ICT subject with total students who selected ICT subject as one of the main subjects in GCE A/L. From this analysis it is identified that the passing percentage of ICT is maintaining a place in between 60% and 80% from the year 2011 to 2016. And also, the passing percentage of students in ICT subject with total GCE A/L students was calculated (Fig. 8). By comparing these results, it can be identified that the passing percentage of students in ICT subject with total GCE A/L students has started to increase in the year 2015 and continued to year 2016.

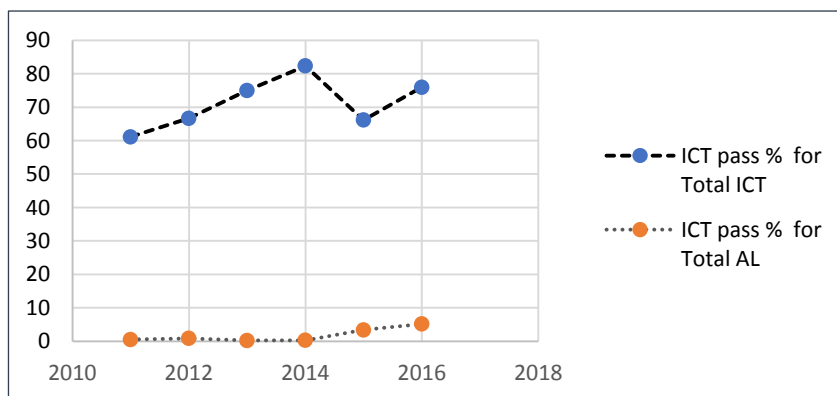


Fig. 8. Passing percentage of ICT subject for A/L students

Moreover, Fig. 9 shows a result for the comparison of passing percentage of ICT subject for the total student who selected ICT subject in Technology stream in the year 2015 and 2016. From its starting of Technology stream, ICT result gives a better passing percentage for students who took the ICT subject as one of the main subject in Technology stream. As seen in Fig. 6, the arrival of Technology stream has increased the selection rate of ICT subject from the year 2015.

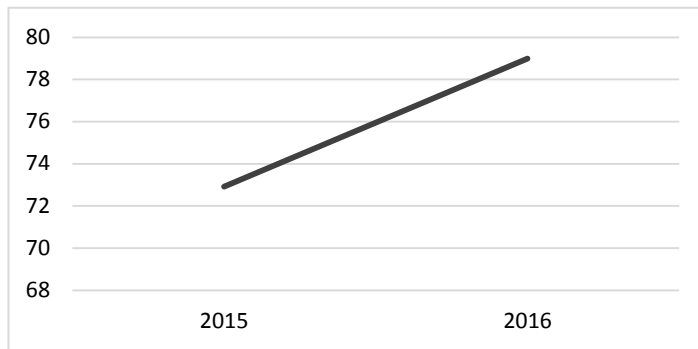


Fig. 9. Passing percentage of ICT subject for A/L students

As mentioned above, the students from these two divisions of Technology stream can select the ICT subject as the third main subject with other two (2) main subjects. The last analysis was done to analyze the willingness of technology stream students to select ICT as third main subject of these two divisions separately. Fig. 10 illustrates the flow of ICT subject selection by students of both divisions from year 2015 to 2019.

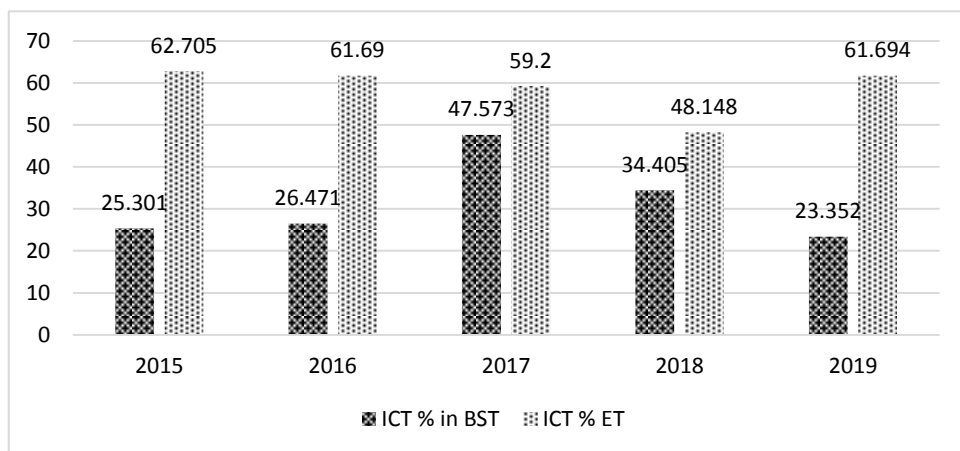


Fig. 10. Passing percentage of ICT students for total ICT students in Technology Stream

This graph enlightens that the students who following Engineering Technology are willing to take the ICT subject as third main subject than the students of Biosystems Technology.

5 Conclusion and Future Direction

The selection rate of ICT subject has a remarkable improvement in the year 2015 and also it has a modest increase of nearly 1% – 2.5 % per year from 2015 to up to now. It is a fact that the arrival of new Technology stream was the reason for these increases in selection rate of ICT.

Moreover, more than 60% of students are getting success in their ICT subject examination in each year and also the passing percentage of ICT students of Technology stream has a significant improvement from 73% - 79% on the year 2015 to 2016.

There is no significant growth in selection rate of ICT subject in Technology stream. But, it shows highest selection rate of 60.846% in the last year 2019. However, more than 50% of technology students select ICT as third main subject, even though it is one of the optional subjects among the pool which contains eleven (11) subjects.

The Engineering Technology students are more willing to take ICT subject as the third main subject than the Biosystems Technology students.

The results enlighten that there is a fast progression in the selection of ICT subject in GCE A/L after the arrival of Technology stream at Ampara District.

This study can be enriched to find out the reason what would be for the fast progression of ICT subject selection by GCE A/L students and the reason for the disparity of willingness to select ICT subject by Engineering Technology and Biosystems Technology divisions in future.

6 References

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