

Lifelong Learning Program's Evaluation: A Cost Analysis Study

Noorul' Ain Md Shariff, Suhaida Abdul Kadir, Khairuddin Idris
and Ramli Basri

Faculty of Educational Studies, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor,
Malaysia

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Abstract

This study aimed to compare cost of lifelong learning program particularly for *Kluster Jahitan dan Pakaian* at three community colleges from three different zone in Malaysia. This study only discusses the cost of programs run by community colleges from 2014 until 2016. The cost-effectiveness analysis methods were used to achieve the objectives of the study. The results found that community colleges spend 56% of the total cost in personnel costs, 43% on the cost of equipment and only 1% of the cost of materials. The financial analysis cost showed that there is a difference among community colleges.

Keywords: Cost Analysis, Cost-Effectiveness

Introduction

There is a growing of literature that recognizes the importance of lifelong learning in giving its benefits to life. Sculler et al. (2001), categorize the benefits of lifelong learning into two distinct categories, first, non-economic benefits which are not measured directly in term of productivity incremental and second, benefits to the wider society. Previous studies have define lifelong learning as continues learning in a person's life involving variety of educational participation. As stated by Dorsett, Lui, & Weale (2010), lifelong learning is a participation in any form of educational programs that recognize specific qualifications after the age of 25 years, of age after a period of full-time education. According to Hwang & Seo (2012), lifelong learning is a continuous self-development throughout a person's life that is characterized by lifelong, voluntary and self-motivation to study whether for personal or professional reasons.

Malaysia defines lifelong learning as learning activities that occur in individuals aged 15 years or older unless they are enrolled full-time in college or university in order to obtain academic qualifications (Kementerian Pengajian Tinggi Malaysia, 2011). Some features of lifelong learning has been listed in the Action Plan Culture Lifelong Learning in Malaysia including; lifelong learning as a potential for self-improvement; efforts to achieve success through the acquisition of skills, knowledge and talents; learning process that takes place in a variety of

modes or methods and including formal and non-formal; and social support systems that promote and assist the direction and control of individuals in lifelong learning. The community college is an educational institution under the Department of Community Colleges of Education, Ministry of Higher Education that emphasizes education and technical and vocational training (TVET) and lifelong learning program.

Plewis & Preston (2001) shows how, in the past, research on lifelong learning was mainly concerned with knowledge development, increase in the employment market, increase revenue opportunities, job readiness, and others. Meanwhile Boeren (2016), noted that studies on community participation in lifelong learning has been made in the various disciplines of study included the economy (such as cost-benefit), sociology (such as social class, gender, race, etc.) and psychological (such as motivation, desire and design, the theory of the life cycle and etc.). However, there is very little published data on cost analysis in evaluating lifelong learning program. This can be seen, searching using keyword costs, cost-effectiveness and cost analysis through indexed Scopus journal related to lifelong learning such as *Education & Training*, *Australian Journal of Adult Learning*, *International Journal of Lifelong Education*, *International Journal of Training and Journal of Vocational Education & Training*, showed less than 10 articles with the keywords cost in the title of the article. This proves the statement claim by Levin dan Belfield (2014), that education field lag behind in the studies that examined cost analysis compared to health that have tons of studies, that later enable researchers to refer, compare and to explore the previous studies on techniques and methodology and improvements can be carried out from time to time.

Previously, most researchers conducted cost-effectiveness studies at formal education levels such as in schools (e.g. Dhaliwal, Duflo, Glennerster, & Tulloch, 2013; Kivela, Haldre, Part, Ketting, & Baltussen, 2014) and in high education sector (e.g. Belfield, Crosta, & Jenkins, 2014; Bommel, 2008). Implementation of cost-effectiveness studies is also limited to certain aspects such as teacher selection, class size reduction, computer as a teaching aid, dropout program and preventative students (Hollands et al., 2016).

Cost analysis gives an overview of how costs incurred and distributed by several stakeholders including school or institution providing the service, other government agencies, volunteer, private sector, suppliers of goods and materials, and customer service. Studies show expenditure and institutions criteria can predict the efficiency and effectiveness of an institution (Powell, Gilleland, & Pearson, 2012). According Hollands et al. (2014), most studies report the implementation of the same program but implemented in several locations. Thus arises the question about which locations deliver the program more effectively and which location best to represent the cost effectiveness and how the researchers took into account a range of cost-effectiveness in all locations. Then, Hollands and colleagues proposed that estimated costs to be made in each location and compared with the effectiveness of the data in the same location. Therefore, this study investigate which community college serve the lifelong learning program in more cost-effective.

Lifelong Learning Program at Community College in Malaysia

Malaysia is serious in recognizing the importance of lifelong learning into the national education system. Thus, through the Malaysia Education Blueprint 2015-2025 (Higher Education), lifelong learning has become one of the key agendas in the process of

transforming the Malaysian higher education system (Ministry of Education, 2013). Malaysia has defined lifelong learning as "the process of democratizing education through the mastery of knowledge, skills, and skills through formal or informal methods based on work experience or during training". Three lifelong learning principles are listed in the blueprint which include; (i) implementation that focus on formal, informal and non-formal learning; (ii) self-empowerment development through a student-centered approach in order to reinforce student motivation towards self-development; and (iii) the provision of integrated and coordinated ecosystems to ensure learning opportunities meet the expectations of students, communities and industries.

In the 11th Malaysia Plan (RMK11), the purpose of lifelong learning is to enhance individual skills that focus in the formal education system in Malaysia (Unit Perancangan Ekonomi, 2015). The 11th Malaysia Plan demonstrates the strengthening approach of lifelong learning program in contrast to the 10th Malaysia Plan. The 10th Malaysia Plan focuses on improving the skills of employees by providing ongoing professional funding and development. While in RMK11 focuses on two strategies including; improve the effectiveness of the program implementation to meet the learning needs; and to improve funding regulations and assistance to expand access. Under the first RMK11 strategy, the Community College Studies Department has been appointed to spearhead community empowerment through lifelong learning programs by strengthening the lifelong learning curriculum, reducing duplication and optimizing resources utilization at community level.

Starting with the establishment of 12 community colleges in 2001, community colleges were introduced in Malaysia as an educational institution providing alternative routes in the Malaysian higher education system. As of 2015, 93 Community Colleges have been operating throughout Malaysia (*Koleksi Informasi Terkini Kolej Komuniti Edisi 2015*, 2015). There are two types of program offered by Community colleges in Malaysia namely, a certification program focusing on technical and vocational education and the lifelong learning programs. Lifelong learning programs at community colleges generally focus on training programs that are based on local community needs and to ensure Malaysians gain access to education regardless of age, race and status. This lifelong learning program is basically a short term course where, the minimum hours of a course is 5 hours and can be up to 20 hours or more depending on the contents of the course module. A total of 48 course clusters representing specific skills were conducted under the lifelong learning program at community colleges by 2015. This program is aiming to enhance their socio-economic skills, knowledge and socioeconomic standards as well as to promote a lifelong learning culture among the community.

On average more than 10 000 courses had been conducted by community colleges throughout the country each year. Table 1 shows the number of courses carried out from 2011 to 2014. This give local communities the opportunities to participate in courses offered.

Table 1.

The number of courses carried out from 2011 to 2014

Year	Total Courses
2011	11 076
2012	10 013
2013	7 717
2014	14 287
Average	10 773

(Source: Koleksi Informasi Terkini Kolej Komuniti Edisi 2015, 2015)

Methodology

This cost analysis study was conducted at site level. This is because the implementation of the same program at different locations causes differences in terms of resource use and cost (Hollands et al., 2016).

Participants

Three Community College were randomly selected. This study involved only one program's cluster of lifelong learning program which is *Kluster Jahitan dan Pakaian*. Therefore the selected college must offered sewing and fashion programs since 2014 or earlier.

Cost Estimation

According to Oosterbeek (1998) most economists use theory of human capital to make the hypothesis in their study. In calculating the cost of human capital, the measurement of the cost involves direct costs such as books or tuition fees for education, and opportunity costs, i.e. costs in the form of a person's income that he or she might earn if they are not being a student (Benjamin, Gunderson, Lemieux, & Riddell, 2012). Creemers & Werf (2000) defines cost of program as the required resources to achieve the program objectives and is given in monetary value. Or cost is a sacrificed resources to achieve the objectives of the program implementation (Levin, 1985; Knight, 1993).

Tsang (2002) stated, two groups of costs in the cost of education, the institutional costs, which includes the cost of recurrent expenditure and capital costs that persist for more than a year; and second, private resources. Institutional cost refers to the cost that funded by educational institution in providing educational services. Recurrent expenditure costs are costs incurred in the last year as the cost of personnel and non-personnel items. While the example of the cost of capital is such as equipment, buildings and real estate. Private resources provided by other individual which provides support to educational services by the institution. Three classifications in the private cost; direct private cost which refers to the expenses to be borne by households such as fees, books, transportation, stationery and others; personal contributions whether in cash or in kind; and indirect private costs which refers to the opportunity cost to the participants.

Many researcher have utilized Levin's ingredient model to measure cost (such as Borman & Hewes, 2002; Creemers & Werf, 2000; Hollands et al., 2016; Sailors & Flores, 2014). This model guide researcher to identify and to determine the cost of the program. This model categorizes the cost into several categories including, personnel, material and equipment, facilities, participants input, and other inputs. The model involves three main steps to

determine the exact measurement of the cost, namely; (1) identify and determine the ingredients needed to achieve program objective, (2) determine the costs and calculate the total cost of the program, and (3) the average cost per participant (Levin & Belfield, 2015).

Previous study shows the access to financial report of the program been studied. In this study, cost data were collected using interviews approach as there are some constraints in accessing cost data. As stated by Kivela, Haldre, Part, Ketting, & Baltussen (2014), in the absence of financial records, pricing of resources and the cost of implementation of the program is based on interviews. The data that been collected were from 2014 to 2016 only using cost sheets. The purpose of cost sheet is to record cost on personnel, material and equipment for every college that been studied. Table 2 shows the measurement of cost briefly.

Table 2.
Cost Measurement

Cost Category	Measurement of Cost	Resource
Personnel		
- Consist of trainers, assistant trainer and person-in-charge.	Salary	Financial Administrator or Community College Administrative Officer
- The period (hours) spent in a course.		
- Academic qualification, grade of scheme of service		
Equipment	Equipment depreciation value annually	Document of Asset / Community College Asset Officer.
- Name of equipment, number of equipment		
- Price and Depreciation value		
- Equipment life expectancy		
Material	Estimation cost for material used.	Program coordinator
- Material used during courses		

Program Outcome

Program outcome can be measured by quantities approach such as the enrollment of students in schools, the attendance rate of students who graduate, or the award of graduation; and measuring quality such as cognitive development, academic achievement or non-cognitive skills (McEwan, 2012). Among other examples of results of the program were like, behavioral changes score in the reading program (Massoni & Vergnaud, 2012), the rate of students leaving school (Hollands et al., 2014) and the achievement of pupils in national tests (Fabrino, Siqueira Do Valle, & Gomes, 2014; Isaranuwachai, Brydges, Carnahan, Backstein, & Dubrowski, 2014).

Program’s participation rate for the studied cluster were used as the program outcome in this study. This data were given by the Coordinator Unit of Lifelong Learning Program of community college. Participations were used as the program outcome is because participation rate are the key performance indicator for every college that shows program performance.

Result and Discussion

Financial Analysis Cost

The financial analysis cost showed that there is a difference among community colleges, with the highest total cost are from one of the Community College A, that were RM 121133.16, followed by Community College B with RM56079.38 and Community College C, RM 22388.91 (see Table 3). As can be seen from the table, community college bear the cost of personnel up to 56% of total cost followed by cost of equipment, 43% and lastly material cost with only took 1%.

Community College only provide handout as for material cost. Other material are borne by participants. Personnel cost includes only person-in-charge, instructor and facilitator. Meanwhile cost of equipment include, sewing machine, mannequin, iron and any equipment related to sewing activities that been described by the community college. The cost of equipment has been depreciated over the year. The techniques used are based on Levin and McEwan (2001).

Table 3:

Cost Estimation for Each Community College

Community College	Personne l	Equipment	Material	Total Cost
A	67984.49	52043.67	1105	121133.16
B	27378.32	28416.06	285.00	56079.38
C	14270.56	7758.35	360	22388.91
Percentage %	56.23	43.76	1.01	100

Consistency between cost and effectiveness measurement is necessary and the cost per unit must be examined (Belfield and Levin, 2014). The cost per unit was calculated by dividing the total costs by the number of courses held in those three years (2014 to 2016) (refer Table 4).

Table 4:

Cost per Unit

Community College	Total Courses	Cost per course
A	221	548.11
B	57	983.85
C	22	1017.68

Cost-effectiveness analysis

Cost-effectiveness ratio was derived by dividing cost per course by total number of participations from 2014 to 2016. The lowest cost-effectiveness ratio shows the most cost-effective program (Bemmel, 2008; Hollands et al., 2014). Table 5 shows the cost-effectiveness in every community college. These finding suggest that, Community College C are organizing the program more cost effectively with cost RM 46.25 per participants, followed by Community College A, RM49.8 and lastly Community College B with RM65.59 per participant.

Table 5:

Cost Effectiveness Ratio for Each Community College

Community College	Cost per course (RM)	Average Participation per Course	Cost-effectiveness ratio (RM)
A	548.11	11	49.80
B	983.85	15	65.59
C	1017.68	22	46.25

Conclusion

This study set out to better understand the cost of program that borne by the community college. The findings of this study are able to present important information regarding the differences of cost by each college as proposed by Hollands et al., 2014. This studies have methodological limitations, where some of other ingredients are not included for example, participants input, facility cost and other input. Further research should be under taken to explore factor that contribute to the cost-effectiveness ratio.

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References

- Belfield, C., Crosta, P., & Jenkins, D. (2014). Can Community Colleges Afford to Improve Completion? Measuring the Cost and Efficiency Consequences of Reform. *Educational Evaluation and Policy Analysis*, 36(3), 327–345. <https://doi.org/10.3102/0162373713517293>
- Bemmel, E. P. (2008). *A Cost-Effectiveness Analysis Of Two Community College Baccalaureate Programs In Florida: An Exploratory Study*. Florida Atlantic University.
- Benjamin, D., Gunderson, M., Lemieux, T., & Riddell, W. C. (2012). Human Capital Theory: Applications to Education and Training. In *Labor Market Economics* (7th ed., pp. 243–279). McGraw-Hill Ryerson.
- Borman, G. D., & Hewes, G. M. (2002). The Long-Term Effects and Cost-Effectiveness of Success for All. *Educational Evaluation and Policy Analysis*, 24(4), 243–266. <https://doi.org/10.3102/01623737024004243>
- Creemers, B., & Werf, G. Van Der. (2000). Economic Viewpoints in Educational Effectiveness: Cost-effectiveness Analysis of an Educational Improvement Project, School Effectiveness and School Improvement. *An International Journal of Research, Policy and Practice*, 11(3), 361–384. [https://doi.org/10.1076/0924-3453\(200009\)11](https://doi.org/10.1076/0924-3453(200009)11)
- Dhaliwal, I., Duflo, E., Glennerster, R., & Tulloch, C. (2013). Comparative Cost-Effectiveness Analysis to Inform Policy in Developing Countries. *Education Policy in Developing Countries*, 285–338. <https://doi.org/10.7208/chicago/9780226078854.003.0008>
- Dorsett, R., Lui, S., & Weale, M. (2010). *Economic Benefits of Lifelong Learning*. Retrieved from <http://www.llakes.org.uk>
- Fabrino, R. J. G., Siqueira Do Valle, B., & Gomes, R. C. (2014). The cost of educational effectiveness: Evidence from financing basic education in Brazil. *International Journal of Management Education*, 12(2), 151–166. <https://doi.org/10.1016/j.ijme.2014.03.007>
- Hollands, F., Bowden, a B., Belfield, C., Levin, H. M., Cheng, H., Shand, R., ... Hanisch-Cerda, B. (2014). Cost-Effectiveness Analysis in Practice: Interventions to Improve High School

- Completion. *Educational Evaluation and Policy Analysis*, 36(3), 307–326. <https://doi.org/10.3102/0162373713511850>
- Hollands, F. M., Kieffer, M. J., Shand, R., Pan, Y., Cheng, H., & Levin, H. M. (2016). Cost-Effectiveness Analysis of Early Reading Programs: A Demonstration With Recommendations for Future Research. *Journal of Research on Educational Effectiveness*, 9(1), 30–53. <https://doi.org/10.1080/19345747.2015.1055639>
- Hwang, H., & Seo, D. (2012). Policy Implication of Lifelong Learning Program of EU for Korea. *Procedia - Social and Behavioral Sciences*. <https://doi.org/10.1016/j.sbspro.2012.06.342>
- Isaranuwatthai, W., Brydges, R., Carnahan, H., Backstein, D., & Dubrowski, A. (2014). Comparing the cost-effectiveness of simulation modalities: A case study of peripheral intravenous catheterization training. *Advances in Health Sciences Education*, 19(2), 219–232. <https://doi.org/10.1007/s10459-013-9464-6>
- Kementerian Pengajian Tinggi Malaysia. (2011). *Blueprint on Enculturation of Lifelong Learning for Malaysia 2011-2020*. Ministry of Higher Education Malaysia. Retrieved from <http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:No+Title#0>
- Kivela, J., Haldre, K., Part, K., Ketting, E., & Baltussen, R. (2014a). Impact and cost-effectiveness analysis of the national school-based sexuality education programme in Estonia. *Sex Education*, 14(1), 1–13. <https://doi.org/http://dx.doi.org/10.1080/14681811.2013.813386>
- Kivela, J., Haldre, K., Part, K., Ketting, E., & Baltussen, R. (2014b). Impact and cost-effectiveness analysis of the national school-based sexuality education programme in Estonia. *Sex Education*, 14(1), 1–13. <https://doi.org/http://dx.doi.org/10.1080/14681811.2013.813386>
- Koleksi Informasi Terkini Kolej Komuniti Edisi 2015*. (2015).
- Levin, H. M., & Belfield, C. (2014). Guiding the Development and Use of Cost-Effectiveness Analysis in Education. *Journal of Research on Educational Effectiveness*, 8(3), 400–418. <https://doi.org/10.1080/19345747.2014.915604>
- Levin, H. M., & Belfield, C. (2015). Guiding the Development and Use of Cost-Effectiveness Analysis in Education. *Journal of Research on Educational Effectiveness*, 8(3), 400–418. <https://doi.org/10.1080/19345747.2014.915604>
- Massoni, S., & Vergnaud, J. (2012). Economics of Education Review How to improve pupils' literacy? A cost-effectiveness analysis of a French educational project. *Economics of Education Review*, 31(1), 84–91. <https://doi.org/10.1016/j.econedurev.2011.08.013>
- McEwan, P. J. (2012). Cost-effectiveness analysis of education and health interventions in developing countries. *Journal of Development Effectiveness*, 4(2), 189–213. <https://doi.org/10.1080/19439342.2011.649044>
- Oosterbeek, H. (1998). *Innovative Ways to Finance Education and Their Relation to Lifelong Learning*. *Education Economics* (Vol. 6). <https://doi.org/10.1080/09645299800000020>
- Sailors, M., & Flores, M. (2014). Cost Effectiveness of a Complementary Reading Program. *Journal of Education and Human Development*, 3(4), 1–20. <https://doi.org/10.15640/jehd.v3n4a1>
- Tsang, M. C. (2002). Comparing the Costs of Public and Private Schools in Developing Countries. In H. Levin & P. McEwan (Eds.), *Yearbook of the American Education Finance Association*.
- Unit Perancangan Ekonomi, J. P. M. (2015). *Rancangan malaysia ke-11 (2016-2020)*.