

Computer Skills for Empowering Orphans and Vulnerable Children (OVC) in Malaysia

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Orphans and vulnerable children (OVC) can be defined as children who lost their parents due to AIDS. OVC may lose interest in school due to poverty, emotional and parental sickness or death. These reasons may lead OVC to have low self-esteem and lack of computer skills. Therefore, it is significant for the community to provide educational support for OVC. Computer skill can be defined as a life skill in today's world. However, OVC have limited access to learn computer skills due to hardship in life. University Putra Malaysia (UPM) took up the initiative to transfer knowledge of computer skills program to OVC. This article evaluates the impact of OVC in Malaysia to learn computer skills. Finding shows 50% of the participants responded to have an interest in and high motivation to learn computer skills. It proves that university community can have the ability to provide educational support to OVC.

Key words: *Orphans and Vulnerable Children (OVC), computer skill, educational support.*

Introduction

Statistics show the increasing numbers of OVC in many countries all over the world, especially Africa, Asia and Europe (UNICEF, 2009). OVC can be defined as youth who lost their mother or both parents due to HIV/ AIDS. Being orphaned or made vulnerable can cause these children to have low self-esteem and lose interest in going to school. OVC may lose access to school for several reasons including poverty, need for income-generating activities, stigmatisation, and parental sickness or death. According to Amirah (2009), OVC still have a sense of shame and low self-esteem when they are in public situations. Furthermore, OVC have high levels of

depression, difficulty in making decision, consider themselves as failures, feel persecuted, and are always in a sad mood (Nurulwahida & Ahmad Azman. 2014). There are number of charitable organisations that are working on wellbeing of OVC which focuses on providing OVC basic needs such as food, medical treatment and education. The members of organisation also make an effort to get support from the community to share their knowledge to OVC. The community has a big responsibility to provide support to OVC.

Having a knowledge of computer skill is compulsory for every school student nowadays (Web M. et al, 2017). However, OVC have limited access to learn computer skills as usually most of the charitable organisation do not provide technology such as a computer. Therefore, Universiti Putra Malaysia (UPM) extended an initiative to provide educational support to OVC in learning computer skills. Lecturers and students from the Faculty of Computer Science and Information Technology (FCSIT) organised a mentorship program for the OVC, to empower their computer skill by teaching the basic usage of computers and Microsoft Power Point.

This research measures the impact of providing educational support of computer skill for the OVC. 40 OVC participated with 25 male and 15 females in the age range of 7 to 17 from two charitable organisations namely PERNIM and PAKAT were involved in this program. 20 students from UPM taught and mentored the participants. A pre and post evaluation based on a questionnaire survey given to the participants was undertaken. There are four evaluative variables in the questionnaire which are i) interesting and usefulness, ii) challenge and sharing, iii) know and easy and iv) interest in learning. These variables explain the impact of learning computer skills for OVC.

Four sections in the article are; introduction of the article, followed by background of the research, section three explains the method of the survey and the final section is the results and findings from the questionnaire. The survey is divided into two categories which are pre and post questionnaire surveys for the participants to fill up before and after the program.

Background

There are many research studies on the impact of educational support toward OVC. (Ojiambo & Bratton, 2014) focused on the effectiveness of group activity through play therapy (GAPT) among Ugandan orphans between 10 to 12 years. The outcome shows statistically there is a reduction in problems and behaviour when the educational support program is applied. Furthermore, Hunte and White (2017) suggest applying technology educational support in Malawi Children's Village (MCV) learning curriculum as a first step for MCV to be exposed to recent education that involved technology. Stein et al., (2014) focused on education around poor parental mental health, institutionalisation, under nutrition, and exposure to violence. This

research shows that it is important to support OVC in terms of educational support or providing skills for them to improve their education and life status.

Methodology

The research methodology adopted by Campbell & Stanley (1999) applies One-Group pre-test-post-test design whereby a group of OVC will go through a pre-program questionnaire survey before starting the program. Then another post-program questionnaire survey will be circulated after completing the program. The survey measures the number of outcome variables.

As previously mentioned, FCSIT, UPM organise a mentorship program for the OVC to empower their computer skill by teaching the basic usage of a computer and Microsoft Power Point. The program is held at the computer lab in the faculty. A group of OVC as participants have the opportunity to use computer in the lab. 20 UPM students will help the participants to learn computers and Microsoft Power Point. Having OVC learning computer skills in the faculty will provide them with experience of the university environment and can encourage them to be great students in school.

Participants

There are 40 participants with 25 male and 15 female with a age range of 7 to 17 from two charitable organisations, namely PERNIM and PAKAT. There are also 20 students from UPM that will act as mentors and teach the participants.

Data Collection

The data was collected during the program. Each participant was given two sets of questionnaires to be completed namely Pre-program and Post-program questionnaires. The Pre-program questionnaire is given to the participants to be filled out before they start to learn the computer. At the end of the program, having completed computer and Microsoft Power Point learning, the participants do the Post-program questionnaire. The questionnaires are used to measure the impact of OVC in learning computer skills. UPM students also need to do the questionnaire in order to evaluate the performance of each participant.

Instruments

The questionnaire's emphasis is on analysing 4 variables which are i) interesting and usefulness; ii) challenge and sharing; iii) know and easy; iv) learning interest. Cronbach's alpha score is used to measure the internal consistency of the four variables and the reliability scale of both questionnaires (UCLA, 2020). It is important to measure the Cronbach's alpha score

so as to ensure the reliability of the questionnaires before distributing to the participants. Table 1 shows the Cronbach's alpha score of both questionnaires. From the table it shows that the Pre-program questionnaire contains 6 items with the Cronbach's alpha value of 0.954. The Cronbach's alpha score of Post-program questionnaire is 0.922 for 17 items. According to (Eisinga et al, 2014), questionnaires that have Cronbach's alpha score values of more than 0.9 can be categorised as excellent which suggests that the variables in the questionnaires have relatively high internal consistency.

Table 1: Cronbach Alpha Score for Pre-program and Post-program questionnaires

Scale	Number of Item	Cronbach's alpha value
Pre-Program	6	0.954
Post Program	17	0.922

There are four variables that will be measured from the questionnaires. The measurement is based on exploratory factor analysis (EFA). EFA is a factor analysis technique that identifies the relationship between measured variables. This technique is commonly used by researchers to analyse the questionnaire based on scale (Williams B., 2010). Furthermore, a Likert scale is applied in the questionnaires to collect the participant's attitudes and opinions. According to (Costello et al, 2005), EFA factor above 0.4 is acceptable which show high inter-correlations among the variables being tested in the EFA. Table 3 shows the list of items for both Pre-program and Post-program based on the four variables i) interesting and usefulness; ii) challenge and sharing; iii) know and easy; iv) learning interest.

Interesting and Usefulness

The first variable measures interest and level of usefulness in using Microsoft Power Point. In this program, items A1, A5, A6, B1, B2, B4 and C3 in the questionnaires represent the first variable. These variables measure the interest level of participants towards learning computer skill and their opinion how useful this computer skill knowledge in their daily life.

Challenge and Sharing

Items of A4, A8, A9 and C2 in the questionnaire represent second variable. The second variable measures the challenge that participants faced while learning Microsoft Power Point and asks their opinion of sharing the knowledge with their friends.

Know and Easy

The third variables measures how much the participants already know how to use Microsoft Power Point and how easy is it is to learn this tool. Items A2, A7, B3 and B5 are used to get feedback for the variable of know and easy.

Learning Interest

The fourth variable is the learning interest. There are three categories of learning interest used in this program namely low, medium and high. Low means the participants are not interested in learning computer skills, medium means the participants have average interest in learning computer skills and the high category means the participant are really interested in learning computer skills and willing to share the knowledge with their friends. This variable is measured in both pre and post program with item number A3 and C1 looking at the impact of the learning.

Results

The analysis of the questionnaire is divided into several categories. In this section we will discuss the three categories of results which are i) demographic profile of participants; ii) factor analysis of four variables mentioned above. iii) impact of learning computer skills for OVC.

Table 2 shows the participant's profiles which describe respondents' demographic profile. From the table it shows that 40 of participants involved in the study are 60% male (25 participants) and 40% female (15 participants). Sixteen participants are aged below 12 years old which is 40% of the number of participants. 45% (18 respondents) of participants are aged between 13 to 17 years old. Six respondents are aged more than 17 years old which contributes to 15% of the respondents. Therresults show there is a total of 40 participants and the mean age for respondents is 14.25 years and standard deviation is 3.49.

Table 2: Demographic profile of OVC participants

Variables	N=40	%
Sex		
Male	25	60.0
Female	15	40.0
Age (years)		
<=12	16	40.0
13-17	18	45.0
>17	6	15.0
<i>Mean = 14.25</i> <i>Standard Deviation = 3.492</i> <i>Minimum = 9</i> <i>Maximum = 21</i>		

Table 3 shows the EFA values of items that based are on the variables. As previously mentioned, a value that is larger than 0.4 is acceptable and the higher the value shows high inter-correlations among the variables. Variable 1 which is interesting and useful, shows that all items are larger than 0.4 and the average value of 0.67. Therefore, the inter-correlations between items and variable 1 is higher. From the values it can be concluded that the participants think that learning computer skills is useful and interesting to learn. The participants give their full commitment and focus during learning computer skills and Microsoft Power Point.

Table 3: List of Items and EFA values based on variables

List of Items	EFA	List of Items	EFA
VARIABLE 1 <i>(interesting and useful):</i>		VARIABLE 3 <i>(know and easy):</i>	
A1	0.593	A2	0.589
A5	0.763	A7	0.823
A6	0.701	B3	0.661
B1	0.547	B5	0.781
B2	0.775		
B4	0.655		
C3	0.657		
Average	0.670	Average	0.714
VARIABLE 2 <i>(challenge and sharing):</i>		VARIABLE 4 <i>(learning interest):</i>	
A4	0.572	A3	0.668
A8	0.845	C1	0.833

A9	0.741		
C2	0.796		
Average	0.739	Average	0.751

The average EFA value for Variable 2 is 0.739 which is 37% higher than variable 1. There is continuity in the interest of participants to learn, participants are willing to face the challenge during learning Microsoft Power Point and willing to share their new knowledge with other friends. From the results it shows that the participant are aware that it is significant to share the knowledge with their friends.

The third variable shows the average EFA value is 0.714. The value shows that the participant had easy time when learning the new knowledge of Microsoft Power Point. Items A2, A7, B3 and B5 prove that OVC easily learn Microsoft Power Point and know how to use it after completed the program.

Variable 4 measures the learning interest of the participants. The average value of EFA is 0.751, which is the highest average values among the four variables. It shows that participants have high interest in learning computer skills and Microsoft Power Point. Furthermore, the items in this variable is analysed further and describe the impact of learning in Table 4.

Table 4: Impact Percentage of Learning Computer skills and Microsoft Power Point towards OVC

Learning Interest	Pre-program (no. of participants)	Post-Program (no. of participants)	Impact Percentage
Low	30	10	66%
Medium	6	10	40%
High	4	20	80%

Discussion

The objective of this research is to measure the impact of learning computer skills and Microsoft Power Point for OVC. In order to measure the impact, FCSIT, UPM organiss toe computer skill program teach Microsoft Power Point to 40 OVC participants and ask the participants to fill in a questionnaire survey pre and post programs. Table 4 shows the comparison of impact score between the Pre and Post program. As mention earlier the variable 4 evaluate learning interest in 3 categories namely low, medium and high. Table 4 shows the number of participants that have interest in learning computer skills and Microsoft Power Point before and after the program is held.

Before the program it shows that there are 30 participants which is 75% of total participants that have low interest and understanding in learning the computer. Followed by 6 participants



who have moderate understanding and only 10% of the participants that have high interest in learning and understanding the computer before the program. However, after the program is completed, the number of participants that have low interest decreased from 30 to 10 participants. This shows that there is a 66% of improvement in term of the impact in learning computer and Microsoft Power Point among OVC. Furthermore, the number of OVC that have high interest and understanding in learning computer skills and Microsoft Power Point has tremendously increased from 4 to 20 participants. This increment shows this program contributes 80% of impact to the OVC in learning computer skills and Microsoft Power Point. This prove that this type of program can have a high impact on OVC.

Conclusion

The impact on the university that provided educational support to OVC is very high. It is significant to bridge the gap between university and community, especially with OVC. Although OVC are a minority in Malaysia, the statistics show the number is increasing. It is very important for academia to provide support in terms of education for this minority community. Based on this study, we hope that more universities or educational institutes will contribute educational support to OVC to increase their knowledge and self-esteem which enables them to face real world challenges in the future.

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REFERENCES

- Amirah, A. S. (2009). Murung akibat krisis ekonomi. Retrieved from www.utusan.com.my.
- Costello, A. B., & Osborne, J. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research, and Evaluation*, 10(1), 1-7.
- Eisinga, R.; Te Grotenhuis, M.; Pelzer, B. (2013). The reliability of a two-item scale: Pearson, Cronbach or Spearman-Brown?. *International Journal of Public Health*, 58 (4): 637–643
- Hallfors, D. D., Ph, D., Cho, H., Ph, D., Rusakaniko, S., Phil, D., ... Ph, D. (2015). The impact of school subsidies on HIV-related outcomes among adolescent female orphans. *Journal of Adolescent Health*, 56(1), 79–84.
- Hunte, S., & White, A. (2017). Case Study: Providing Computer Education at Malawi Children ' s Village, (February).
- Lowenthal, E. D., Jibril, H. B., Sechele, M. L., Mathuba, K., Tshume, O., & Anabwani, G. M. (2014). Children and youth services review disclosure of HIV status to HIV-infected children in a large African treatment center: Lessons learned in Botswana. *4 Children and Youth Services Review*, 5, 143–149.
- Nurulwahida & Ahmad, A. (2014). The effectiveness of the modular enrichment activities based on Gardner multiple intelligences and Sternberg thinking skills. *Journal of Education and Practice*, 5 (2), 55.-62.
- Ojiambo, D., & Bratton, S. C. (2014). Effects of group activity play therapy on problem behaviors of preadolescent Ugandan orphans. *Journal of Counseling & Development*, 92(3), 355-365.
- Pufall, E. L., Nyamukapa, C., Eaton, J. W., Campbell, C., Skovdal, M., Munyati, S., (2014). The impact of HIV on children' s education in eastern Zimbabwe. *AIDS Care*, 26(9), 1136–1143.
- Ssewamala, F. M., Karimli, L., Torsten, N., Wang, J. S. H., Han, C. K., Ilic, V., & Nabunya, P. (2016). Applying a family-level economic strengthening intervention to improve education and health-related outcomes of school-going AIDS-orphaned children: lessons from a randomized experiment in Southern Uganda. *Prevention Science*, 17(1), 134-143.
- Ssewamala, F. M., Nabunya, P., Ilic, V., Mukasa, M. N., & Ddamulira, C. (2015). Relationship between family economic resources, psychosocial well-being, and educational preferences of AIDS-orphaned children in southern Uganda: baseline findings. *Global Social Welfare*, 2(2), 75-86.



- Ssewamala, F. M., Nabunya, P., Mukasa, N. M., Ilic, V., & Nattabi, J. (2014). Integrating a mentorship component in programming for care and support of AIDS-orphaned and vulnerable children: lessons from the Suubi and Bridges Programs in Sub-Saharan Africa. *Global Social Welfare*, 1(1), 9-24.
- Stein, A., Desmond, C., Garbarino, J., Van IJzendoorn, M. H., Barbarin, O., Black, M. M., ... & Bakermans-Kranenburg, M. J. (2014). Predicting long-term outcomes for children affected by HIV and AIDS: perspectives from the scientific study of children's development. *Aids*, 28, S261-S268.
- UCLA. (2020). What Does Cronbach's Alpha Mean? Retrieved 15 Jan, 2020 from <https://stats.idre.ucla.edu/spss/faq/what-does-cronbachs-alpha-mean/>
- UNICEF. (2009). Promoting quality education for orphans and vulnerable children: A sourcebook of program experiences in Eastern and Southern Africa. Retrieved May 20, 2014 from www.unicef.org/.../index_53754.html.
- Webb, M., Davis, N., Bell, T., Katz, Y. J., Reynolds, N., Chambers, D. P., & Sysło, M. M. (2017). Computer science in K-12 school curricula of the 21st century: Why, what and when? *Education and Information Technologies*, 22(2), 445-468.
- Williams, B., Onsmann, A., & Brown, T. (2010). Exploratory factor analysis: A five-step guide for novices. *Australasian Journal of Paramedicine*, 8(3), 990399.