

# Cardiopulmonary Resuscitation Skills of Some Undergraduate Human Kinetics and Health Education Students in a Nigerian University

Adedamola Olutoyin Onyeaso<sup>1,\*</sup>, Onyedikachi Oluferanmi Onyeaso<sup>2</sup>

<sup>1</sup>Department of Human Kinetics and Health Education, Faculty of Education, University of Port Harcourt, Port Harcourt, Nigeria

<sup>2</sup>Department of Community Medicine, University of Port Harcourt Teaching Hospital, Port Harcourt, Nigeria

**Abstract Background /Aim of Study:** There is a global support for the teaching of cardiopulmonary resuscitation (CPR) in schools and teachers are expected to be trained accordingly so as to be effective trainers and to increase the number of potential lay person bystander CPR providers for out-of-hospital cardiac arrests (OHCA). Meanwhile, Nigeria is yet to move in this direction. This study aimed at assessing the pre-training and post-training CPR skills of a group of Nigerian student teachers. **Materials and Methods:** A cohort quasi-experimental study design was carried out involving 150 student teachers in the Department of Human Kinetics and Health Education, Faculty of Education, University of Port Harcourt. Before the CPR training, the participants were exposed to a typical scene of a victim of cardiac arrest using a manikin and they were asked to demonstrate steps to resuscitate the victim. This was repeated after the CPR training sessions. Both the training and assessment of the participants were done by an American Heart Association (AHA) - certified CPR instructor. Using a modified AHA Evaluation Guide, the assessment was grouped into four CPR skills domains. **Results:** Although the pre-training CPR skills of the participants were significantly very poor, there was significant improvement after the training in all the CPR skills ( $P < .001$ ). **Conclusion:** The Nigerian student teachers are promising potential CPR instructors for school children and the public, if encouraged as in the advanced parts of the world.

**Keywords** Student teachers, CPR skills, Nigeria

## 1. Introduction

Cardiopulmonary resuscitation is a combination of rescue breaths and chest compressions which are intended to re-establish cardiac function and blood circulation in an individual who has suffered cardiac or respiratory arrest [1]. About 17.5 million people die each year from cardiovascular disease (CVD), an estimated 31% of all CVD deaths worldwide [2]. Furthermore, 75% of CVD deaths occur in low income and middle income countries while 80% of all CVD deaths are due to heart attacks and strokes [2]. According to 'Global Heart' Initiative launched on September 22, 2016, CVD including heart attacks and strokes is the world's leading cause of deaths [2].

Cardiac / respiratory arrest is a very common emergency in not just the adult group but can occur in children and even in the neonatal period [3-5]. The medical science opined that the first 4-8 minutes in sudden collapse is the most crucial period in which resuscitation intervention is most needed [5].

Cardiopulmonary resuscitation (CPR) can be administered by a trained person before the arrival of Emergency Medical Services [1-5]. When trained in CPR, children and adolescents can recognize the need for care and administer CPR and it has been established to be successful in saving victims life when effectively performed [6-8]. Cardiopulmonary Resuscitation is indeed an important life-saving first aid skills practiced throughout the world [4]. It is perhaps the only known effective method of keeping a victim of cardiac arrest alive long enough for definitive treatment to be delivered [4].

Cuijpers et al [9] reported that training of secondary students on CPR by physical education student teachers was not inferior to the training by a registered nurse, suggesting that school teachers, student teachers can be recruited for CPR training in secondary schools.

In another related study, school teachers were ambiguous about whether or not students are the right target group or which grade is suitable for defibrillator training, as well as about the deployment of defibrillators at schools [10].

The authors opined that prior training and even little knowledge about defibrillators were crucial to their perception of student training [10]. Among other barriers to success of CPR in schools is paucity of teachers with CPR

\* Corresponding author:

adedamola.onyeaso@uniport.edu.ng (Adedamola Olutoyin Onyeaso)

Published online at <http://journal.sapub.org/health>

Copyright © 2017 Scientific & Academic Publishing. All Rights Reserved

skills and the need for familiarization of teachers with CPR training kits [11]. In fact, teachers' role in generally increasing the number of potential bystander CPR providers for out-of-hospital cardiac arrest (OHCA) victims is well established [12-20].

Besides the training of the school children in CPR, saving of the life of a child who could be a victim of cardiac arrest would be very rewarding in addition to saving of an adult victim in the school environment.

According to Zinckernagel et al [10], cardiac arrests in schools are rare events, but the death of a seemingly healthy young person can be especially devastating for the family and local community. In trying to encourage the incorporation of CPR teaching and training in Nigerian schools as in other parts of the world, some recent related earlier studies had been published [21-24].

Therefore, this study aimed at assessing the CPR skills of a group of physical and health education student teachers (the potential professional teachers) at the University of Port Harcourt, Nigeria. It was hypothesized that: (1) their pre-training CPR skills would not be statistically poor; (2) their post-training CPR skills would not be significantly different from their pre-training CPR skills.

## 2. Materials and Methods

A quasi-experimental cohort study design involving one hundred and fifty two (152) 200-level undergraduate physical and health education students (student teachers) in the Department of Human Kinetics and Health Education, Faculty of Education, University of Port Harcourt, Port Harcourt, Nigeria was carried out.

The study took place in June, 2017. The study sample of the student teachers in the Department of Human Kinetics and Health Education were admitted in 2015 and are studying to graduate with Bachelor of Education Degree (majoring in either Health Education or Human Kinetics). They are being trained primarily to become teachers in primary and secondary schools. These student teachers are from different parts of Nigeria.

The following null hypotheses were generated and tested:

**Ho1:** That the pre-training CPR skills of the student teachers would not be statistically poor

**Ho2:** That their post-training CPR skills would not be significantly different from their pre-training CPR skills.

### Stage 1 (Pre-training)

A questionnaire containing a section for the demographic data of the participants and a section having the modified AHA 'Skills Evaluation Guide' to assess their pre-training cardiopulmonary resuscitation skills was used. Prior to the training on CPR, all of them were shown a scenario of a victim of cardiac arrest using the manikin and asked to demonstrate what they would do in such a situation to save the life through cardiopulmonary resuscitation.

The Skills Evaluation Guide (SEG) was used to score the student teachers' pre-training skills while the questionnaire was used to obtain the demographic data of the participants and their theoretical knowledge of CPR.

### Stage 2 (Training and Immediate Post-training)

The teaching on CPR was carried out for 60 minutes using American Heart Association (AHA) CPR guideline which is available online. Their skills were evaluated using modified AHA Evaluation Guide involving four domains – 1. Scene Safety & Call for Help (S), 2. Chest Compressions (C), 3. Airway & Rescue Breaths (B) and 4. Cycle / min & Placement of victim in the correct Recovery Position (R) (Appendix). After the CPR teaching and training session, they were then asked to individually attend to the same scenario given to them before the training and they were scored. Two of the initial student teachers (participants) were not available for the post-training CPR skills assessment, giving the final sample size of 150 participants.

The lead researcher, who is an American Heart Association (AHA) - certified CPR instructor did the training and assessed the CPR skills of the participants. The CPR skills were grouped into the four domains. The process of training them on hands-on and re-assessment took another 3 hours.

### Determination of Poor and Good CPR Skills

For each of the four (4) domains of the CPR skills, 50% is considered acceptable and any score less than that is considered poor CPR Skills while 50% and above is considered good CPR skills.

### Statistical Analysis

The Statistical Package for Social Sciences (SPSS) was used to analyze the data. In addition to descriptive statistics, one sample and two sample T-tests statistics were employed in the analysis and testing of the null hypotheses with significance level set at  $P < 0.05$ .

## 3. Results

The final cohort of one hundred and fifty (150) participants in this study was made up of 56 (37.33%) male and 94 (62.67%) female, age range of 17-28 years and mean age of  $21.11 \pm 2.40$  (SD).

In Table 1 is the CPR skills performance of the participants in the four domains assessed in percentage with none of the participants having up to 50% skills performance during the pre-training stage while twenty one (21) performances ( 6 for poor skills in scene safety and call for help, 9 in chest compressions, 4 in the procedure for airway patency and giving of rescue breaths and 2 for cycle/min and placement victim in the correct recovery position) still belonged to the 40% of the CPR skills after the training. The rest of the performances in the four CPR skills domains belonged to 60% to 100% scores after the CPR training.

Table 2 gives the means of the pre-training and post-training CPR skills of the participants with the gain in CPR skills and the percentage gain for each domain. Generally, there were marked gains in all the CPR skills domains.

The least percentage gain was found in chest compressions (C) - 79.13%. The first null hypothesis was

tested using one sample T-test statistics and was rejected with  $P < 0.001$  as shown in Table 3 below, meaning that the participants had significantly poor pre-training CPR skills.

Table 4 below shows the rejection of the second null hypothesis ( $P < 0.001$ ), meaning that the CPR skills of the participants after the training became significantly better than their pre-training skills.

**Table 1.** The CPR skills performance of the participants in the four domains expressed in percentage against the number of participants in each domain

	S1	C1	B1	R1	S2	C2	B2	R2
1(20%)	61	127	125	20	5	11	2	7
2(40%)		4	3	1	6	9	4	2
0(0%)	89	19	22	129	2	1	-	-
1(20%)	61	127	125	20	5	11	2	7
2(40%)		4	3	1	6	9	4	2
3(60%)					31	21	24	16
4(80%)					32	23	46	33
5(100%)					74	86	73	92

Note: No participant scored up to 50% in the pre-training CPR skills assessment, meaning that all of them had poor pre-training CPR skills. Concerning post-training CPR skills, twenty one (3.5%) performances were still regarded as poor CPR skills while the rest were good CPR skills with 60% to 100% scores

**Table 2.** The pre-training and post-training CPR skills with the gain and percentage gain in skills

CPR Skills Domains	N	Pre-test (x)	Post-test (x)	Gain (x)	Gain %
S	150	.4067	4.0533	3.6466	89.97%
C	150	.8667	4.1533	3.2866	79.13%
B	150	.8733	4.2067	3.3334	79.95%
R	150	.1467	4.3400	4.2933	96.62%

**Table 3.** One sample T-test statistics showing the significantly poor pre-training cardiopulmonary skills of the Nigerian student teachers

Test Value = 0						
CPR skills Domains	T	df	Sig.(2-tailed)	Mean Difference	95%Confidence Interval of the Difference	
					Lower	Upper
S1	10.106	149	.000	.40667	.3271	.4862
B1	31.121	149	.000	.86667	.8116	.9217
C1	27.468	149	.000	.87333	.8105	.9362
R1	4.811	149	.000	.14667	.0864	.2069

**Table 4.** Paired Sample T-test statistics analysis of the post-training and pre-training CPR skills of the Nigerian student teachers

Paired Differences								
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		T	df	Sig.(2-tailed)
				Lower	Upper			
Pair 1 S2 - S1	3.64667	1.29084	.10540	3.43840	3.85493	34.599	149	.000
Pair 2 C2 - C1	3.28667	1.42526	.11637	3.05671	3.51662	28.243	149	.000
Pair 3 B2 - B1	3.33333	1.05974	.08653	3.16235	3.50431	38.524	149	.000
Pair 4 R2-R1	4.19333	1.08496	.08859	4.36838	4.36838	47.336	149	.000

## 4. Discussion

Despite the significantly poor pre-training CPR skills of the participants in this Nigerian study, the participants had significantly improved CPR skills after the CPR training with 60% to 100% scores unlike in their pre-training CPR skills where all of them had significantly poor CPR skills. However, this Nigerian study, 3.5% of the performances (involving all the skills domains) after the training were still poor because they were found as 40%. This is comparable to a recent and the only similar study involving Nigerian primary and secondary school teachers CPR skills where all the teachers had 'good CPR post-training skills' [24].

Similar study [22] on the CPR skills of some Nigerian secondary school students reported significantly improved post-training CPR skills as in the present study. These findings are encouraging for the advocacy of introducing CPR teaching and training into the Nigerian school curriculum.

In Saudi Arabia, the study [17] involving 305 teachers with 75.4% as males and 66.5% between the ages of 31 and 50 had 35.7% of the teachers with earlier CPR training; but still had CPR knowledge and skills low (mean = 4.0, sd = 1.62). According to that report, the average scores did not differ between those who had training and those who did not. They concluded that in Al-Qassim, Saudi Arabia secondary school teachers lacked CPR training and hence have little knowledge or skills and those teachers were willing and desirous to have more CPR training available to them. The report further stated that if health officials should provide future training, teachers could serve the community better. Although the Nigerian study showed very poor pre-training CPR skills, their post-training CPR skills improved very significantly. It should be noted here that none of the Nigerian student teachers had any previous.

CPR training before this study. Also, it is interesting to note that more female student teachers were involved in our Nigerian study (62.67%) compared to the Saudi Arabia study with more males. This could be due to the religious differences between Al Qassim in Saudi Arabia having mainly Muslims and Rivers state in South-south Nigeria having mainly Christians.

According to Mpotos et al [16], a total of 4273 teachers participated in their study (primary school n = 856; secondary school n = 2562; higher education n = 855). Of all respondents, 59% had received previous CPR training with the highest proportion observed in primary schoolteachers (69%) and in the age group 21-30 years (68%). Sixty-one percent did not feel capable and was not willing to teach CPR, mainly because of a perceived lack of knowledge in 50%. In addition, 69% felt incompetent to perform correct CPR and 73% wished more training.

Feeling incompetent and not willing to teach was related to the absence of previous training. Primary schoolteachers and the age group 21-30 years were most willing to teach CPR. They concluded that although many teachers mentioned previous CPR training, only a minority of mostly

young and primary schoolteachers felt competent in CPR and was willing to teach it to their students. In our present Nigerian study, our cohort group has a comparable age group having the age range of 17-28 with mean age of  $21.11 \pm 2.40$  (SD). It would seem that the younger teachers are more interested in teaching as they are more competent in CPR.

This quasi-experimental Nigerian study is similar to that reported by Navarro-Paton et al [25] which assessed the effectiveness of the three teaching programmes for CPR training - traditional course, an audio-visual approach and feedback devices and concluded that the feedback devices gave the best outcome. The present Nigerian study, being the first Nigerian study that assessed the CPR skills of student teachers, combined all the programmes.

Meanwhile, del Pozo et al [26] showed that incorporating the song component in the cardiopulmonary resuscitation teaching increased its effectiveness and the ability to remember the cardiopulmonary resuscitation algorithm. Our study highlights the need for different methods in the cardiopulmonary resuscitation teaching to facilitate knowledge retention and increase the number of positive outcomes after sudden cardiac arrest. Our future Nigerian studies might try to find out which approach would be the most effective in our environment. The Society of Health and Physical Educators (SHAPE), America in their Guidance Document stated that the health teacher in schools should ensure that the curriculum is organised to foster development skills to proficiency and the curriculum includes multiple opportunities for practising health-related skills [27]. It has one of its core principles as encouraging best practice in health education which includes having certified and / or highly trained health educators teaching health at all levels. One of the strengths of the present Nigerian study is that it is fairly representative and helping to adequately prepare our future school teachers to be better equipped to provide needful health-related education for our children. In addition, it is a form of advocacy for introduction of CPR teaching and training into the Nigerian school curriculum.

## 5. Limitation of the Study

Although the University of Port Harcourt is a Federal University and the students are usually drawn from different parts of the country and by extension the student teachers involved in this study, not every State of the Federation in Nigeria is represented. Therefore, the study sample cannot be said to be a perfect representative sample of the future teachers in Nigeria.

## 6. Conclusions

Although the participants (student teachers) in this Nigerian study had significantly poor pre-training CPR skills, their post-training CPR skills were encouragingly significantly improved and better than their pre-training CPR skills.

## 7. Recommendations

More related studies should be targeted at the potential school teachers (student teachers) in other Nigerian Universities and other tertiary institutions so as to create the needed awareness, increase advocacy and provide adequate training on CPR to them in preparation for their future roles in the teaching / training and incorporation of CPR into the Nigerian school curriculum.

## ACKNOWLEDGEMENTS

We would like to appreciate Prof C O Onyeaso (Professor of Orthodontics) for his inspirational guidance and encouragement during this study.

## Appendix

### Skills Evaluation Guide

Skills	Performed steps	Obtainable score
<b>Scene safety &amp; call for help</b>		
1. Ensure safety	1	
2. Check for response	1	
3. Call for help	1	
4. Check for breath warm	1	
5. Check for breath sound & chest movement	1	
Total 5		
<b>Compression</b>		
6. Heal of Hand	1	
7. Centre of the chest	1	
8. Push hard	1	
9. Push fast	1	
10. Chest Recoil	1	
Total 5		
<b>Airway &amp; breathing</b>		
11. Head tilt back & Chin lift	1	
12. Pinch nose	1	
13. Mouth- to- Mouth breathing	1	
14. Lasting 1 sec	1	
15. Chest rise	1	
Total 5		
<b>Cycle/minute &amp; recovery position</b>		
16. 30/2	1	
17. Body turned left	1	
18. Left hand below head	1	
19. Left leg straight	1	
20. Right leg folded backward	1	
Total 5		
<b>Grand Total</b>	<b>20</b>	

NAME / SERIAL NUMBER -----

SEX / AGE: -----

MATRICULATION NO: -----

NAME OF DEPARTMENT -----

STATE OF ORIGIN-----

INSTRUCTOR'S REMARK: -----

DATE

## REFERENCES

- [1] Field JM, Hazinski MF, Sayre MR, Chameides L, Stephen M, Schenxnayder R, Hemphill SR, Hoek V. Part 1: Executive Summary: 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. *Circulation* 2010; 122:S640-S656 doi: 10.1161/CIRCULATIONAHA.110.970889. World Health Organization (2016). Cardiovascular disease Fact Sheet <http://www.who.int/mediacentre/factsheets/fs317/en/index.html> retrieved on 15/08/2017.
- [2] International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. "Part 1: Executive Summary Science with Treatment Recommendations." *Circulation* 2010; 122 (16 Suppl 2), S250-75. doi:10.1161/CIRCULATIONAHA.110.970897. PMID 20956249.
- [3] Hazinski, MF, Nolan JP, Billi JE., et al. Part 1: Executive summary: 2010 International consensus on cardiopulmonary resuscitation and emergency cardiovascular care science with treatment recommendations. *Circulation* 2010; 122(16 Suppl 2): 250-75.
- [4] Resuscitation (2010). European Resuscitation Council Guidelines for Resuscitation 2010 Executive Summary. Elsevier: [www.elsevier.com/locate/resuscitation](http://www.elsevier.com/locate/resuscitation). Miró O, Escalada X, Jiménez-Fábrega X, Díaz N, Sanclemente G, Gómez X, ..Sánchez M. (2008). Cardiopulmonary Resuscitation Programme for Secondary Schools (PROCES): conclusions after 5 years. [http://www.semes.org/revista/vol2\\_0\\_4/3\\_ing.pdf](http://www.semes.org/revista/vol2_0_4/3_ing.pdf).
- [5] Meissner TM, Kloppe C, Hanefeld C. Basic life support skills of high school students before and after cardiopulmonary resuscitation training: a longitudinal investigation. *Scand J Trauma Resusc Emerg Med* 2012; 14: 20:31.
- [6] Plotnikoff R, Moore PJ. Retention of cardiopulmonary Resuscitation knowledge and skills by 11- and 12-year-old children. *Med J Aust* 2009; 198: 296 – 302.
- [7] Cuijpers PJPM, Bookelman G, Kicken W, deVries W, Gorgels APM. Medical students and physical education students as CPR instructors: an appropriate solution to the CPR-instructor shortage in secondary schools? *Neth Heart J* 2016; 24: 456-461. DOI: 10.1007/s12471-016-0838-2.
- [8] Plotnikoff R, Moore PJ. Retention of cardiopulmonary Resuscitation knowledge and skills by 11- and 12-year-old children. *Med J Aust* 2009; 198: 296 – 302.
- [9] Cuijpers PJPM, Bookelman G, Kicken W, deVries W, Gorgels APM. Medical students and physical education students as CPR instructors: an appropriate solution to the CPR-instructor shortage in secondary schools? *Neth Heart J* 2016; 24: 456-461. DOI: 10.1007/s12471-016-0838-2.
- [10] Zinckernagel L, Hansen CM, Rod MH, Folke F, Torp-Pedersen C, Tjørnhøj-Thomsen T. A qualitative study to identify barriers to deployment and student training in the use of automated external defibrillators in schools. *BMC Emerg Med* 2017; 17: 3 DOI: 10.1186/s12873-0114-9.
- [11] Zinckernagel L, Hansen CM, Rod MH, Folke F, Torp-Redersen C, Tjørnhøj-Thomsen T. What are the barriers to implementation of cardiopulmonary resuscitation training in secondary school? A qualitative study. *BMJ Open* 2016; 6: e010481. Doi: 10.1136/bmjopen-2015-010481.
- [12] Compton S, Swor RA, Dunne R, Weich RD, Zalenski RJ. (2003). Urban public school teachers' attitudes and perceptions of the effectiveness of CPR and Automated External Defibrillators. *Am J Health Educ* 2003; 34(4): 186-192.
- [13] Miro O, Jimenez-Fabrega X, Espigol G, Culla A, Escalada-Roig X, Diaz N, Salvador J, Abad J, Sanchez M. Teaching basic life support to 12-16 year olds in Barcelona schools: views of head teachers. *Resuscitation* 2006; 70: 107-116.
- [14] Chew KS, Yazid MN, Kamarul BA, Rashidi A. Translating knowledge to attitude: a survey on the perception of bystander cardiopulmonary resuscitation among dental students in Universiti Sains Malaysia and school teachers in Kota Bharu, Kelantan. *Med J Malaysia* 2009; 64(3): 205-9.
- [15] Patsaki A, Pantazopoulos I, Dontas I, Passall C., Papadimitriou L, Xanthos T. Evaluation of Greek high school teachers' knowledge in basic life support, automated external defibrillation, and foreign body airway obstruction: implication for nursing intervention. *J Emerg Nurs* 2012; 38: 176-81.
- [16] Mpotos N, Vekerman E, Monsieurs K, Derese A, Valcke M. (2013). Knowledge and willingness to teach cardiopulmonary resuscitation: A survey amongst 4273 teachers. *Resuscitation* 2013; 84: 496-500.
- [17] Al Enizi BA, Saquib N, Zaghloul MSA, Alaboud MSA, Shahid MS, Saquib J. Knowledge and attitude about Basic Life Support among secondary school teachers in Al-Qassim, Saudi Arabia. *Int J Health Sci (Qassim)* 2016; 10(3): 415-422.
- [18] Wissenberg M(1), Lippert FK, Folke F, Weeke P, Hansen CM, Christensen EF, Jans H, Hansen PA, Lang-Jensen T, Olesen JB, Lindhardsen J. Association of national initiatives to improve cardiac arrest management with rates of bystander intervention and patient survival after out-of-hospital cardiac arrest. *JAMA* 2013; 310: 1377-84.
- [19] Resuscitation Council (UK). Guidelines 2015: Education and implementation of resuscitation. Last Accessed on May 18, 2017.
- [20] SureFire CPR. CPR TRAINING FOR TEACHERS. What is CPR Training for Teachers? (Last Accessed August 17, 2017).
- [21] Onyeaso AO, Onyeaso CO. Nigerian Public Primary and Secondary School Teachers' Knowledge and Attitude towards Cardiopulmonary Resuscitation. *Int J Adv Res* 2016; 5(1): 89-95.
- [22] Onyeaso AO, Onyeaso CO. Cardiopulmonary Resuscitation Skills in some Nigerian secondary school students. *Port Harcourt Med J* 2016; 10(2): 60-65.
- [23] Onyeaso AO. Retention of Cardiopulmonary Resuscitation Skills in Nigerian Secondary School Students. *J Educ Pract* 2016; 7(15):162-168.
- [24] Onyeaso AO, Onyeaso OO. Cardiopulmonary resuscitation skills of some Nigerian Primary and Secondary Schools Teachers. *JAMMR* 2017; 23(2): 1-8.

- [25] Navarro-Paton R, Freire-Tellado M, Basanta-Camino S, Barcala-Furelos R, Arufe-Giraldez V, Rodriguez-Fernandez JE. Effect of 3 basic life support training programs in future primary school teachers. A quasi-experimental design. *Med Intensiva* 2017, pii: S0210-5691(17)302024. Doi:10.1016/j.medin.2017.06.005.
- [26] del Pozo FJF, Alonso JVB, Velis NBC, Barahona MMA, Siggers A, Lopera E. Basic life support knowledge of secondary school students in cardiopulmonary resuscitation training using asong. *Int J Med Educ* 2016; 7:237-241. Doi:10.5116/ijme.5780.207.
- [27] Society of Health and Physical Educators (SHAPE), America, Guidance Document. 2015. [www.shapeamerica.org](http://www.shapeamerica.org). (Last accessed on August 20, 2017).