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Views of Physics Teachers in Ilorin Metropolis on the Impact of Religion on the Way the Applicants of Physics are utilized *(Pp. 296-307)*

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Abstract
In this study, efforts were made to find out the views of 47 Physics Teachers in Ilorin metropolis on the impact of religion on the utilization of the applications of Physics. Thirty of them were Christians while Seventeen were Moslems. The instrument was a questionnaire comprising 12 statements. Findings from the study showed that respondents agreed with the peaceful use of the applications of Physics. They also agreed with the fact that attack should be mounted on any nation that wants to fight us with their offensive weapons. Relevant recommendations were made.

Introduction
Religion has been defined by the Oxford English dictionary as the belief in and worship of a superhuman controlling power especially a god. Religion is subjective, designating the feelings and acts of men which relate to God. Religion denotes the influences and motives to human duty which are found in the character and will of God. Religion is a high sense of moral obligation and spirit of evidence or worship which affect the heart of man with respect to the Deity. Religion is the means by which sanctify is achieved.

Eruku (2003) rightly observed that there is conflict between religion and science. The conflict seems irreconcilable in the areas of the biblical doctrine of creation in the early chapters of Genesis and the scientific theory of evolutions. Because of this, some people who had been enthusiastic Christians in their youth turn their backs to the Church after secondary school or university education after they have read some sciences particularly Darwin's evolution theory in Biology. Such people compare the Genesis accounts of the world being created in six days while the theory of evolution has it that it look many millions of years before the planet, earth could sustain life and that the different creatures in the earth came to their present state through a long process of evolution. The discovery of the scientific methods of estimating the age of fossils of the earth and of the universe has even added to the reasons which led many to give up any belief in creation. According to Eruku (2003), experience has shown that many of those who gave up belief in creation also gave up belief in the creator. This is true but it is surprising because it has been stated by the historians that it was the Christian culture that gave rise to the development of science. Eruku highlighted this point when he wrote.

> A good case can be made for the view that the natural science and such offspring as technology and medicine are the gifts of the liberating influence of Christianity on Science and humanity. This natural science, with its new scientific attitude, was a development from the geometry and philosophy of Greece, the astronomy of the medieval world, the arithmetic and algebra of the Indians and Arabs as well as the religion and ethics of the Hebrews. Yet it arose as only one of the twenty or more great civilizations described by the historian. Toynbe and that was Christian civilization (p.3).

Gilkey (1968) stressed the same point when he said:

> Actually, the Christian religion in significant ways prepared the ground for the theory of evolution. The Christian concept of Creation provided one of necessary foundations for the development of Western empirical science, of which Darwinian is certainly an important result. The biblical view that time is both linear and irreversible, and therefore capable of cumulative development is perhaps the most crucial of all the distant

> progenitors of the concept of evolutionary theories of origin, spread within a culture saturated with biblical concept of creation and of providence (p. 160).

Even with all these revelations, the church was not prepared for the new scientific development. This may be due to the fact that the bible was interpreted literally and so any theory that was not in conformity with the biblical views was rejected. The scientists too had their own share of the blame (Eruku, 2003). They might have incurred the opposite of the church by the way they presented their new discoveries. Kealy (1967) confirmed this when he said:

> In a recent study, Russel Stannard, a high energy physicist from the Open University attempted to clear up the misunderstanding involved in the famous theory of Galileo. He concluded that the problem lay in the fact that the pride of a pope was thoughtfully wounded by an over-zealous scientist who was lacking in fact. For, Galileo, was not only an arrogant and in-tolerant debater but he also took delight in humiliating his opponents and making men appear ridiculous. His intolerance forced the church authorities to make a premature decision on circumstances which rendered a balanced judgement very difficult (p. 28).

From the above, it is clear that much of the problem between religion and science has to do with the attitude of the personalities handling such controversial issues.Thus the bible (the major book used by the Christians) can be said to be relevant in the daily lives and actions as Christians and therefore worthy ambassadors of God in the home, the nation and the world at large. For instance the syllabus for the Christian Religious Knowledge for the Senior School Certificate Examination (SSCE) had the following themes amongst others.

(i) The Sovereignty of God
  - (a) God the creator-Genesis 1,2
  - (b) God the controller of the universe-Genesis 1:26-31; Amos 9:5-7; Isaiah 45:9-12

(ii) Leadership
  - (a) Joseph as a leader – Genesis 37:1-28; 41:1-57

(b) Moses as a leader – Exodus 1:2; 3; 4:1-17; 5:1-5; 22-23; 14:1-31; 32:1-14; Numbers 13:1-33; 14:1-19
(c) Joshua as a leader – Numbers 13:16; 14:10; 27:15-23; Joshua 1:1-15; 6; 24:1-28
(d) Deborah as a leader - Judges 4:1-24

(iii) Disobedience and Consequences
(a) Saul's disobedience – 1 Samuel 10:1-16; 15:1-19
(b) Consequences of Saul's disobedience – 1 Samuel 15:20-25; 16:14-23; 31:1-13

(iv) A man after god's own Heart
(a) Submission to the will of God – 1 Samuel 26:1-25; II Samuel 12-15-25
(b) Repentance and forgiveness – II Samuel 3:1-39; 11; 12:1-15 of Psalm 51

(v) Concern for One's Nation
(a) The condition of the nation – II Kings 24; 25:1-17; Nehemiah 1:1-11; 2:99-20
(b) Response to the state of the nation – Nehemiah 1:11-11; 2:9-20; 4:1-23; Ezra 1:5-11; 4; 5:1-2; 6:13-22; 7:1-10

(vi) Social Justice and True Religion
(a) Social Justice – Amos 2:6-8; 4:1-3; 5:1-24; 7:10-17; 8:4-14
(b) True Religion – Amos 4:5

(vii) Punishment and Hope
(a) Punishment – Jeremiah 2;5:14-19 of Jeremiah 32:26-35; Ezekiel 18
(b) Hope – Jeremiah 3:11-18; 4:1-2, 14

(viii) Love
(a) God's love for man – John 3:16-18
(b) John's message of love for one another – 1 John 4:7-21 of John 13:34-35; I Corinthians 13:1-13

(ix) Law and Grace

The purpose and significance of law and grace – Romans 4:13-25; 5:18-21 of Galatians 3:10-14

(x) Humility – Philippians 2:1-11; 1 Peter 5:5-11

(xi) Forgiveness – Philemon 1 of 2 Corinthians 2:5-11

(xii) Christian giving – Philippians 4:14-20 of 2 Corinthians 9:1-15
(xiii) Civic Responsibility
  (a) The need for order in society – Romans 13:1-17
  (b) God citizenship – 1 Peter 2:13-17
(xiv) Dignity of labour – 2 Thessalonians 3:6-15 of Colossians 3:23-25
(xv) Faith and work – James 1:22-27 of Hebrew 11:1-3
(xvi) Impartiality – James 2:1-13
(xvii) Christian living in the Community
  (a) Christian living among non-Christians – 1 Peter 2:9-25 of 1 Peter 4:1-19
  (b) Interpersonal relationship among Christians – 1 Peter 5:1-11

All the themes written above teach all and sundry to be good leaders, to love everybody, to obey the law of the land, to forgive offenders. They also teach about the civic responsibility of individuals, dignity of labour, impartiality and also to live in peace with everybody. This researcher could not contact the Qu'ran, the holy book of the Muslims. But she listens to Islamic sermons and what are preached resemble what have been highlighted above. In particular, she hears the Islam is a religion of Peace.

Science can be said to be observation, identification description, experimental investigation and theoretical explanation of phenomena.

Science can be applied or pure. Applied science is knowledge of facts, events of phenomena as explained, accounted of, or produced, by means of powers, causes, or laws. Pure science is the knowledge of these powers, cause or laws, considered apart or as pure from all applications. Both these terms have a similar and special significance when applied to the science of quantity, as; the applied and pure Mathematics. Exact science is knowledge so systematized that prediction and verification by measurement, experiment, observation etc are possible. The Mathematical and physical sciences are called exact sciences.

Physics is one of the physical science subjects taught at the Senior Secondary level of the Nigerian educational system. Its importance as a discipline cannot be over stressed especially in the area of science and technology.

Applications of physics are numerous. The information revolution that the ENIAC heralded about 60 years ago has profoundly changed the ways in which physicists along with society, in general work and interact. By any measure, the United State Society is now in some phase of what is being called the information revolution. This "third wave" a term introduced by Alvin Toffler, follows the industrial revolution of the 18th century and the agricultural revolution of 10,000 years ago, and is resulting in phenomenal social, cultural and economic transformations. It is changing the way in which people spend their time at work and at play, and the ways in which they live their lives in general. This revolution is technology based with the seeds being planted over a long period. The seeds date back to the dawn of human development and tools such as the triangle, compass and abacus. More modern contributions include Napier's Bone (1617) and the side rule that slide rule that evolved from it, "Blaise Pascal's Acting Machine (1642). Charles Babbage's Difference Engine (1822) and Vannevar Bush's Differential Analyzer (1931).

During the World War II, the need for powerful computational tools came from two sources. One was the designing of atomic weapons at Los Alamos (now Los Alamos National Laboratory). The other was improving methods of cryptography, with the need to decipher the Enigma – encoded messages used by the Germans and to break the purple code used by the Japanese. A good choice for the beginning of the information revolution might be the commissioning in 1946, of the Electronic Numerical Integrator and computer, the first fully electronic computer.

The Physics and Mathematics Communities have played a major role in the long development period of this revolution, going back to ancient times, as well as during the 60 years that have elapsed since the ENIAC (Brenner, 1966). Between 1946 and 1955, a number of computers were designed and built as new ideas and technologies were introduced mostly under government sponsorship.

Applications of Physics also include manufactured equipment for repelling aerial and marine attacks and for land-based confrontations. Others are communication equipment, defensive and offensive weapons, bulldozers, graders, low loaders, payloader and so on (Omosewo, 1991). Steam boilers and turbine driven electric motors, measuring instruments, hand tools, machine tools, fossil fuels (coal, petroleum, natural gas lignite and so on),

Biomass, hydropotential, solar energy, wind, potential and others such as uranium, geothermal, tar, sand, ocean waves and tides are also applications of Physics. The advanced countries of the world particularly the United States of America woke up from her slumber just in 1957 (50 years ago) when the Sputnik was launched by the Russians. The information revolution of the Americans has changed the ways in which the society (Nigerians inclusive) in general works and interacts. In fact, the bicycle, the scooter, the motor car, the train the steamer, the aero plane, the helicopter all have been designed by Physicists to enable one to travel more easily and quickly from place to place. When jet propelled aeroplanes leave Lagos at midnight, they reach London about 9.00a.m the next morning covering a distance of about 6400 kilometers. It means somebody can have super in Nigeria and lunch the next day in London, taking only breakfast in the airliner. Sixty years ago, this would have been a dream. It is now a reality. They are all applications of Physics. Again, it is now possible for somebody to sit at home in Nigeria and speak on the telephone to someone in London or America. One can even be in a ship on the ocean and speak to somebody on shore by telephone.

The radio and television enable us to learn of events taking place in distant lands from day to day. In short, Science particularly Physics has made the world seem smaller. Telstar, the communication Satellite now enables some events occurring in Paris to be seen on television in New York, while it is actually happening. The Cable Network News enables the whole world have first hand about anywhere in the world. It is even possible to see on the screen the person one is taking to over the telephone. The fact that one would go round the whole earth fifteen to eighteen times a day travelling several hundred of thousands of kilometers, makes the world appear tiny. There is no doubt whatsoever, that science, particularly physics has made all forms of communication simpler and quicker (Omosewo, 2004).

The above mentioned applications have been very interesting because they have been used for peaceful purposes. In fact the offensive weapons, if used to rain bombs on the planet, earth, then there may not be any life left on the earth. What one is saying is that all these applications could be utilized in either good or bad ways. This is where religion comes in. Also, the efficiency of any institution depends on the academic competence of the teaching staff (Omosewo, 1998). It can also be said that the religion of the students of any institution may depend to a large extent on the religions tenets of the teaching staff. Religion can play a very significant role in the way all

applications of Physics are utilized. For instance, a Physicist who plays down on religion may one day go to the sky and rain down bombs on the earth and that may be the end of everybody on earth. This is the rationale for this study.

Hence, there is the need to assess the views of Physics teachers (Christians and Moslems) in Ilorin metropolis on the way the applications of Physics are utilized. One major question to which answers were sought was asked, that is, what is the influence of religion on the views of Physics teachers in Ilorin metropolis concerning the way the applications of Physics are utilized. The corresponding hypothesis was that there is no significant difference in the responses of Christian and Moslem Physics teachers in Ilorin metropolis on the way the applications of Physics are utilized.

Methodology

The sample for this study was 47 Physics teachers purposively selected in 47 secondary schools of Ilorin metropolis. There are 53 schools in Ilorin metropolis but 47 schools had Physics teachers and all the 47 teachers were involved in the study. The teachers comprised of 20 university graduates and 27 NCE graduates who are undergoing degree programmes of the Universities of Ilorin and Ado-Ekiti. Ten of the University graduates read Physics as a teaching subject while the remaining ten comprised five holders of B.Sc Mechanical, Agricultural and Civil Engineering degrees, two had B.Sc degree in Geology while the remaining three had HND in Engineering and they claimed to be undergoing PGDE programme of the University of Ilorin. Only three of the teachers were females. Their experiences range between ten and five years. Thirty of them were Christians while seventeen of them were Muslims.

The instrument used for this study was a questionnaire of the close-ended type divided into sections A and B.

Section A: Dealt with personal information such as name of school, gender, qualifications, religion and experience.

Section B: Consisted of twelve items meant to ascertain their views concerning the utilization of the application of Physics. The twelve statements consisted of six negative statements and six positive statements. An example of a negative statement was*: The Sputnik was invented by the*

Russians in 1957 so that they could go into the space to rain bombs on the earth. An example of a positive statement was: *Although, bombs are available for attacks, we should pray against wars.* The teachers were to agree/disagree or be neutral about the statements.

The draft questionnaire was given to five experienced Physics teachers in Queen Elizabeth Secondary School, Ilorin, Government Secondary School, Ilorin, Government Day Secondary School, Oko-Erin. The validators adjudged the instrument adequate. The questionnaire was then given to twenty Physics teachers in twenty secondary schools in Osogbo metropolis in Osun State to respond to. After an interval of four weeks it was given to them to respond to again and their responses were compared using the Pearson Product Moment Correlation Coefficient. A Coefficient of 0.82 was obtained.

Forty seven copies of the questionnaire were taken to the teachers in Ilorin metropolis with the help of research assistants. It took them two days to accomplish the task because they wanted to collect back questionnaire on the spot.

Result

The results of the study are hereby displayed. Only one question was asked on each of the practical applications. The only question gave rise to only one hypothesis.

The only hypothesis was tested. Table 2 shows the probability values for all the questionnaire items. Questionnaire items 1, 3, 5, 7, 8, 9 and 11 were statistically significant. This implies that the views of Physics teachers based on their religious beliefs were statistically significant for all the seven items. Item number eight is a negative statement that is 'Attack should be mounted on any nation that wants to fight us with their offensive weapons'. Both Moslem and Christian teachers agreed with this statement. The reason may be that all of them value their lives. So they do not want to fold their hands while the enemy wants to kill them. So the Bible or Qu'ranic idea that if you are slapped on one ear you should let the person slap the other one does not apply in this case. Everybody should run for his/her dear life.

Summary Discussion and Recommendations

In this study, efforts were made to find out the views of 47 Physics teachers in Ilorin metropolis (30 Christians, 17 Moslems) on how applications of

Physics should be utilized. There was only one research question, which had an equivalent hypothesis. The hypothesis was tested using x^2 statistics. The finding was that the views of respondents were significant for questionnaire items 1,3,5,7,9 and 11 all positive statements irrespective of religion. Their views were also significant for item 8, which is a negative utilization of the application of Physics. Nobody can blame these teachers because they love themselves. The Bible and the Qu'an do not urge anybody to love his/her neighbour more than his or herself.

The findings of this study, though not many are worthy of note by science education researchers particularly Physics educators. Preservice Physics teachers need training on the applications of all the Physics concepts taught at the senior secondary school level and they should be made aware about the utilization of such applications of Physics. In this case, there will be less wars particularly in the middle East where there is no day instances of wars will not be reported. It has been found from this study that both religion and Physics are human enterprises and that some morals should put into their uses.

From this study, it has become necessary for the study of the two religions to be upheld in the secondary schools in Ilorin metropolis. Religious classes particularly Christian Religion Study are virtually empty. This is not in order. This maybe the reason why the society is now rampant with all sorts of bad behaviour ranging from highway robbery, 419, lack of respect for the adults and lieing. The importance of religion in ameliorating these societal ills cannot be over-stressed. Therefore, various school authorities in Ilorin metropolis, Kwara State and Nigeria as a whole should make compulsory, the study of Christian Religious study and Islamic Religious study.

References

Allan, M. (1987, March). The first electronic computer. *Physics Today,* 25.

Eruku, N. A. (2003). A comparative study of the biblical accounts of creation and the scientific theory of evolution. In *Religion, Science and Culture* (edds) P. Ade Dopamu and E. Ade Odumuyiwa, pp. 1-18.

Holy Bible (Reviewed Standard Version).

Gilkey, L. (1968). Evolution and the doctrine of creation. In *Science and Religion* (edd) I. G. Barbour, p. 160.

Kearly, S. P. (1987). *Science and the Bible* Ireland: The Columbia Press.

Omosewo, E. O. (1991). *Relevance of Physics Education programmes of Nigerian Higher Institutions to the Teaching of Senior Secondary Physics,* Unpublished Ph.D Thesis, University of Ilorin, Ilorin.

Omosewo, E. O. (1998): Effect of Teachers' Academic Qualifications on Senior Secondary Students' performance in Physics, *International Journal of Education Management* (IJEM) 2 (2) 81-87.

Omosewo, E. O. (2004). Nigerian Senior Secondary Physics Teachers views on Applications of Physics to Information and Communication Technology *Journal of Science Education* (in press).

Toffler, A. (1980). *The third Wave*, Morrow, New York.

West African Examinations Council (2002-2004). *Senior School Certificate Examination (Nigeria)* Lagos, The West African Examination Council.

Table 1: Responses of Teachers to the Questionnaire items expressed in Frequencies and Percentages

Questionnaire	**Frequency of Agreed Responses**	**%**	**Frequency of Neutral Responses**	**%**	**Frequency of Disagreed Responses**	**%**	**Total**
1.	30	64%	01	2%	16	34%	4
2.	10	21%	03	6%	34	72%	4
3.	42	89%	02	4%	03	6%	4
4.	11	23%	01	2%	35	74%	4
5.	27	57%	05	11%	15	32%	4
6.	12	26%	01	2%	34	72%	4
7.	33	70%	06	13%	08	17%	4
8.	30	64%	08	17%	09	19%	4
9.	35	74%	10	21%	02	4%	4
10.	12	26%	04	8.5%	31	66%	4
11.	41	87%	05	11%	01	2%	4
12.	31	66%	01	2%	15	32%	4

Table 2: Probability Statistical Table of the Views of Physics Teachers in Ilorin Metropolis on the Basis of Religion

S/N	Questionnaire Items	Probability	Significant or Not
1.	Computers should not be used to programme bad things	0.091	S
2.	Graders and bulldozers should be used to pull down houses of enemas	0.049	NS
3.	The Sputnik and the aeroplanes should not carry weapons of wars	0.708	S
4.	The CNN is not good so it should be cancelled	0.046	NS
5.	The MTN, MTEL, GLO, ECONET should be used to pass true information	0.053	S
6.	The MTN, MTEL, CLO, ECONET are good for passing fake information	0.048	NS
7.	Dip your enemy in hot bitumen	0.077	S
8.	Attack should be mounted on any nation that wants to fight us with their offensive weapons	0.063	S
9.	The offensive weapon should not be tested on planet that has human being	0.051	S
10.	It is good to test offensive weapon anywhere in the world	0.046	NS
11.	Motor cars should be driven with care	0.778	S
12.	Hot iron should be used to seal lips of enemies	0.047	NS

S = Significant, NS = Not Significant

N.B: Significant at 5% i.e o.05 level of Significance.