



Superstitious Beliefs on Evolution Held by Senior Secondary School Students in Osun State, Nigeria

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Abstract

This study examined superstitious beliefs on evolution held by senior secondary school biology students in Osun State, Nigeria. The superstitious beliefs were pre-conceptions on evolution held by the participants before the formal teaching of the content. A descriptive research survey design was adopted. One hundred and fifty Senior Secondary one biology students were purposively selected for the study from Osogbo Metropolis, Osun State, Nigeria. Four research questions were raised to give direction to the study. The research questions were answered using frequencies and percentages while bar charts were used for graphical representations. The findings indicated that the superstitious beliefs on evolution held by students were mostly based on the origin of life. In addition, variations were observed in terms of religion and parents educational background as students who practiced traditional religion and those whose parents had no formal education held more superstitious beliefs on evolution. It was therefore recommended that teachers should adequately understudy and help students to unlearn their superstitious beliefs on evolution before or during classroom instructions.

KEY WORDS: Superstitious beliefs, Evolution, Religion, Parent education background.

Introduction

Every society is guided by laws, ethics and beliefs which are instituted to pilot and manage human behaviour, relationship with others, and believe in the supernatural. Africans, for instance, hold many strong beliefs in relation to the nature of the universe, the principles governing its evolution, and the sequence of cause and effect in nature. These beliefs are grafted in ideas, practices, myths, fables and taboos which constitute part of the people's culture and are usually transmitted from one generation to another (Olawepo, 2011). Ancient thoughts and beliefs within the African context usually manifest as mythology, metaphysics and cosmology (Ekeke & Ekeopara, 2010). This is because African shares four fundamental features which are belief in the existence of a creator - the Supreme God and lesser gods, belief in the continuation of life after death - reincarnation, belief that human being is the centre of the universe and belief in the theory of causality (Evaristus & Gregory, 2018; Onwuatuegwu, 2020).

Nigeria like other African countries have many culture-based mythical beliefs which are sacrosanct and peculiar to different societies and communities. These beliefs according to Odejobi (2013) usually take the form of taboo or superstitions which are adopted to instill good virtues into

members of the society where they exist. Superstitious beliefs are mainly cultural beliefs which are used as compass to guide human behaviours and actions (Ajayi, 2017). Ahmed, Abimbola, Yahaya and Abdulsalam (2018) contended that superstitious beliefs are practices which are irrational in nature and the outcome of ignorance or fear of the unknown. Onuoha (2007) observed that superstitious beliefs are related to every aspects of life such as; diseases and illness, cleanliness, plants, animals, death and funerals, childbearing, medicines, origin of the earth, natural environment, religion and causes of natural phenomena such as rain, draught, and eclipse. This affirms the submission of Foster and Kokko (2009) that superstitious is an inevitable feature of the adaptive behaviour of all organisms, including human beings.

Superstitious related beliefs in Nigeria varies from one ethnic group to another. For instance, the Yorubas in South-west Nigeria have several proverbial sayings, taboos, fables, folklores, myth, parables, fairy-tales, beliefs in deities such as Ogun (the god of iron), Sango (the god of thunder and lightning), Oduduwa (progenitor of the Yorubas), Aje (the god of wealth), Olokun (god of the seas), Oṣun (the god who presides over love, intimacy, beauty, wealth, diplomacy and of the Oṣun river in Osun State), and belief in the spirits of the ancestors (Kanu, Omojola & Bazza, 2020). These beliefs sometimes lead a typical Yoruba community to make rituals and sacrifices to appease the spirits which sojourn within their environments. A prominent belief among the Yorubas is that Ile-Ife a town in Osun State Nigeria is the evolutionary seat of the world with Oduduwa (who is believed to have descended from heaven) as the progenitor (Emeagwali, 2020). This belief underpins the origin of life (evolution of species) among the Yorubas and contrast with the theory of organic evolution which held that the first living organism developed from non-living molecules such as methane, ammonia, hydrogen and water vapour.

Organic evolution refers to the gradual changes through time which causes species to become modified to produce multiple descendants of divergent traits (Losos, 2013). According to Idodo-Umeh (2015) evolution is the series of gradual and adaptive changes which plant and animals are subjected to in response to environmental modifications and changes. The first sets of biologists to put forward the theories to support organic evolution were Jean Baptist Lamarck in 1801 and Charles Darwin in 1859. Lamarck's theory of organic evolution hinged on the principles of need, use and disuse of parts, and acquisition of characteristics by inheritance while Darwin's theory was based on the principle of natural selection due to factors such as overpopulation, struggle for existence, variation and adaptation which led to the development of new species (Alzohairy, 2009). However, new advances in the field of genetics, ecology, cytology, embryology, paleontology, physiology and anatomy have led to the modification of the theory of natural selection to integrate the new evolutionary evidences which had been proved scientifically.

Evolution, as a topical content in the Nigerian Senior Secondary School Biology Curriculum is scheduled for Senior Secondary School three under the theme continuity of life with contents such as; meaning of variation and evolution, study of the progressive change in the anatomy of organisms from water to land, adaptive colouration and their function, structural adaptation in organisms, different castes of social insects and their roles, theories of evolution, evidences of evolution and forces responsible for evolution (Federal Ministry of Education, 2009). Learners are exposed to these contents coupled with other topics under the theme organization of life, organisms at work, organism



and the environment before writing the Senior School Certificate Examinations (Adeoye & Abimbola, 2016).

Several evidences in literature and Chief Examiners' reports of examination bodies such as the West African Examination Council (WAEC) and National Examination Council (NECO) has revealed that evolution is a hard-to-learn biology topic for senior school students due to students cultural background and beliefs about evolutionary concepts and avoidance of questions relating to evolution (Abdullahi, 2017; Olawepo, Abimbola & Ahmed, 2014; WAEC e-learning, 2010). Researchers in the field of science education such as Ahmed (2005) and Olawepo (2011) also reported that the superstitious beliefs on evolution held by senior school students were related to growth, hereditary, water, plants and animals. Meanwhile, Olorundare (1998) had earlier observed that most times, students bring their superficial cultural beliefs and alternative conceptions into the classroom, thereby making the internalization of new knowledge or schema arduous for the learners.

According to Glaser (1991) the way students represent information in science depends on the structure of their existing knowledge. This structure enables learners to build a mental model that guides their learning. Hence, students sometimes interpret scientific information using their background and cultural exposure rather than the scientific worldview. This perfectly coincides with the tradition of constructivism. The theory of constructivism holds that students build up (construct) their own meanings from the words or visual images they hear or see based on experiences (Piaget, 1968). Consequently, the experiences and previous knowledge of individual learner is of central importance in the construction of new knowledge (Adeoye & Ayanda, 2019). It is against this background that this study was designed to identify and analyze the superstitious beliefs on evolution held by senior secondary school biology students in Osun State, Nigeria. Meanwhile, the present study treated superstitious beliefs as pre-conceptions on evolution held by students before their exposure to classroom teaching and learning.

The nexus between religion and evolution had been investigated in several studies. Woods and Scharmann (2001) investigated high school students' perceptions of evolutionary theories and found out that religious belief was a factor that strongly shaped the attitudes and acceptance of evolutionary theories by students. Kose (2010) conducted a study on biology students' and teachers' religious beliefs and attitudes towards the theories of evolution and found out that the theories of evolution were rejected by participants based on their strong religious inclination. Olawepo, Abimbola and Ahmed (2014) in a study on biology related superstitious beliefs prevalent in Isin, Kwara State, Nigeria also observed that Muslims held more evolution related superstitious beliefs than the Christians. Delphonso (2018) discovered that there was a significant difference in the non-scientific pre-conceptions about evolution held by biology students practicing Christianity, Islam and Traditional religion. In contrast to the existing literature, the present study investigated the influence of Christianity, Islam and Traditional religion on superstitious beliefs in evolution held by senior school students in Osun State, Nigeria.

Furthermore, evidences abound in literature that researchers are unresolved in their conclusions on the influence of parental educational background on students understanding of biology related concepts. For instance, Osuafor and Okonkwo (2013) concluded that parents' educational level did not significantly influence students' achievement based on the study conducted on the influence of family background on the achievement of secondary school biology students in Anambra

State, Nigeria. Ogbugo-Ololube (2015) investigated the impact of students' parental background on academic achievement in secondary schools and discovered that parents' level of education influences students' academic achievement. In addition, Khan, Iqbal and Tasneem (2015) found a significant relationship between parents' educational level and students' academic achievements. In the present study, parents' level of education was based on tertiary, secondary, primary and those with no formal education and this contrast with existing studies in terms of categorization and locale.

In recent times, evolution as a biology topic has caught the attention of many researchers (Jiya, 2011; Olawepo, Abimbola & Ahmed, 2014; Delphonso, 2018) owing to its significance at providing basic knowledge about the origin of life, variation in organisms and the continued existence of life on earth. However, the preconceived superstitious beliefs of learners about evolution tends to affect their internalization of the modern and scientific evolutionary knowledge. In view of this, the present study investigated superstitious beliefs on evolution held by senior secondary school students in Osun State, Nigeria while religion and parents educational background were the independent variables.

Purpose of the Study

The purpose of this study was to identify and analyze the superstitious beliefs on evolution held by senior secondary school students in Osun State. The objectives of the study were to:

1. identify the types of superstitious beliefs on evolution held by senior school students in Osun State.
2. investigate the influence of religion on the superstitious beliefs in evolution held by senior school students in Osun State.
3. determine the influence of parental educational background on the superstitious beliefs in evolution held by senior school students in Osun State.

Research Questions

In this study, answers were provided to the following questions:

1. what are the types of superstitious beliefs on evolution held by senior school students in Osun State?
2. what is the influence of religion on the superstitious beliefs in evolution held by senior school students in Osun State?
3. what is the influence of parental educational background on the superstitious beliefs in evolution held by senior school students in Osun State?



Methodology

The descriptive survey research design was adopted for this study. Descriptive research was considered appropriate because the identified superstitious beliefs on evolution among senior secondary school students were documented and scientific descriptions were given by the researchers. The target population for the study include all Senior Secondary one (SSS 1) students offering biology in Osogbo metropolis in Osun State, Nigeria. The choice of SSS 1 biology students was crested on the need to understand students' conceptions of evolution before they are exposed to the topic in SSS 3. Purposive sampling technique was employed to select 150 students out of which 120 participated in the study. Purposive sampling technique was considered appropriate in order to have a representation of the respondents along religion.

The instrument used for data collection was a structured interview schedule/protocol. The interview was by direct conversation (face-to-face discussion) during which respondents mentioned their superstitious beliefs on the origin and development of life forms. The instrument consisted of three sections. The first section elicited information on the sex, religion and parent educational status of each respondents. The second section required students to mention their beliefs about the creation of life forms such as soils, the earth, origin of fishes, frogs, lizards, birds, apes and human. Questions asked in the third section requires students to state their beliefs on transitions of one organism (life form) to another.

Face and content validity of the research instrument were ensured by three lecturers from the Department of Science Education, University of Ilorin and two lecturers from Kwara State College of Education, Ilorin. The reliability of the research instrument was determined using the test re-test procedure with an interval of three weeks between the first and second administration of the instrument. Superstitious beliefs identified by the researchers from the trial testing were converted into continuous data or scores and analyzed using Pearson product-moment correlation statistics. The reliability index was found to be 0.70.

The researchers and two research assistants administered the research instrument. The research assistants were trained on the use of interview protocol. Each interviewer taped the responses of the interviewees as well as documented them in writing. The interviewers conducted their interviews in each of the twelve schools selected for the study during the break period of each schools. Interview protocol lasted for six (6) minutes for each respondent. At the end of the interview sessions 120 students provided usable data and information. The three research questions raised were answered using frequencies and percentages together with bar charts. A benchmark of 60% was used for the categorization of the responses from the respondents.

Data Analysis and Results

Demographic Characteristics of Respondent

The demographic characteristics of respondent base on religion in Figure 1 indicated that 62 (51.7%) of the respondents were christians, 55 (45.5%) were muslim while 3 (2.5%) practice traditional religion.

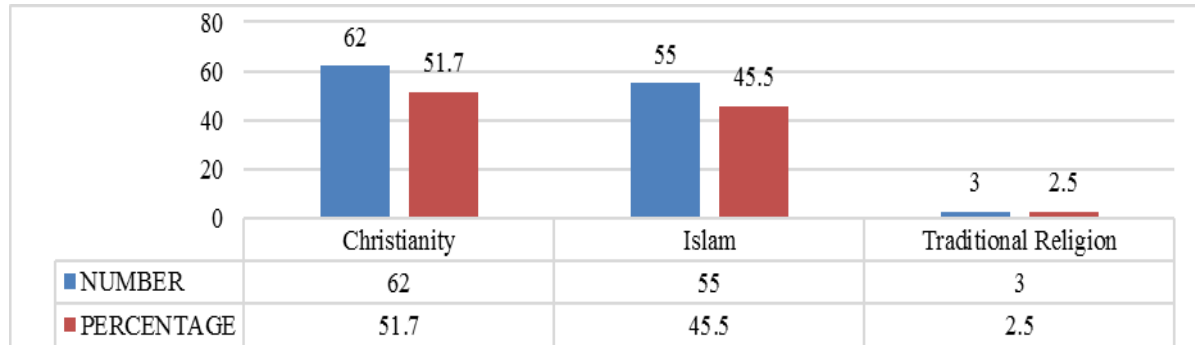


Figure. 1: Distribution of the respondents base on religion

Figure 2 revealed that 28 (23.3%), 48 (40.1%), 25 (23.8%) and 19 (15.8%) of the respondents parents had tertiary, secondary, primary and no formal education respectively.

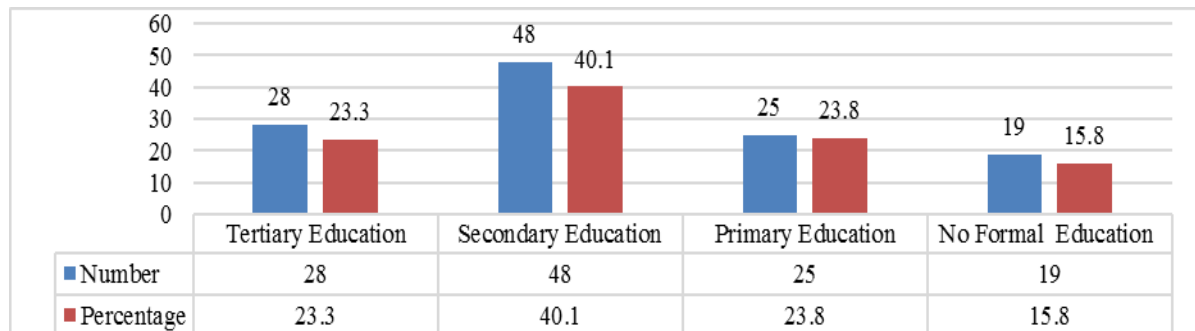


Figure. 2: Distribution of the respondents base on parent educational background

Research Question 1: what are the types of superstitious beliefs on evolution held by senior school students in Osun State?

Table 1 indicated that out of the twenty superstitious beliefs on evolution identified, thirteen were on the origin of life forms (S₂, S₆, S₇, S₉, S₁₀, S₁₁, S₁₂, S₁₄, S₁₆, S₁₇, S₁₈, S₁₉ and S₂₀) while eight (S₁, S₃, S₄, S₅, S₈, S₁₃, and S₁₅) were on transition of life from one form to another. This implies that many of the superstitious beliefs held by students were related to the origin of life.



Table 1
Origin and Classification of Superstitious Beliefs on Evolution

Superstition (n)	Belief	Origin of Life forms (O)	Transition of Life forms (T)
S ₁	Earth was formed from a rolling ball in the sky	-	T
S ₂	Earth was created by Obatala (god) and Oduduwa (the progenitor)	O	-
S ₃	Earth emerged in Stages like pregnancy in the womb	-	T
S ₄	Earth developed from an ancient (comic) egg	-	T
S ₅	Cosmic tree supported the earth during its creation	-	T
S ₆	Lakes/rivers were formed in pits dug out by animals	O	-
S ₇	Hills were formed by birds flapping wings to scatter sand	O	-
S ₈	Worms developed from oil and garbage	-	T
S ₉	Life forms were created all at once, in the past	O	-
S ₁₀	Fish fell from the sky when it was raining	O	-
S ₁₁	Frogs fell from the sky when it was raining	O	-
S ₁₂	Oduduwa created dry land out of ocean through sand scattered by a bird	O	-
S ₁₃	Lizard evolved from snake	-	T
S ₁₄	Birds emerged in the sky	O	-
S ₁₅	Gorilla developed gradually from humans	-	T
S ₁₆	Soil was created by Obatala	O	-
S ₁₇	Plants were created by Obatala with Orunmila as counselor	O	-
S ₁₈	Soil was created due to the bursting of the earth ball	O	-
S ₁₉	Man was created by the Supreme God in a lump	O	-
S ₂₀	Humans were created in the sky and then lowered to the earth	O	-

Research Question 2: what is the influence of religion on the superstitious beliefs in evolution held by senior school students in Osun State?

Table 2 and the graphical representation in Figure 3 revealed that the Christian students held eight superstitious beliefs on evolution which were: S₂, S₇, S₉, S₁₀, S₁₃, S₁₅, S₁₉ and S₂₀. Muslim students held nine superstitious beliefs, which were: S₇, S₈, S₉, S₁₀, S₁₃, S₁₅, S₁₇, S₁₉ and S₂₀. The three students who practiced Traditional religion held eleven superstitious beliefs on evolution which were S₂, S₇, S₈, S₉, S₁₀, S₁₃, S₁₄, S₁₆, S₁₇, S₁₉ and S₂₀. The six beliefs held by the three groups were S₇, S₉, S₁₀, S₁₃, S₁₉ and S₂₀. This implies that there was variation in the number of superstitious beliefs on evolution held by students based on religion with the Traditional religion having the highest number.

Table 2
Superstitious Beliefs Held Students of the Different Religion

Superstition (N)	Belief	Christian N = 62 (100%)	Muslim N = 55 (100%)	Traditionalist N = 3 (100%)
S ₁	Earth was formed from a rolling ball in the sky	23 (37%)	31 (56%)	1 (33%)
S ₂	Earth was created by Obatala (god) and Oduduwa (the progenitor)	38 (61%)	20 (36%)	2 (67%)
S ₃	Earth emerged in Stages like pregnancy in the womb	17 (27%)	21 (38%)	1 (33%)
S ₄	Earth developed from an ancient (comic) egg	20 (32%)	19 (35%)	1 (33%)
S ₅	Cosmic tree supported the earth during its creation	33 (53%)	31 (56%)	1 (33%)
S ₆	Lakes/ivers were formed in pits dug out by animals	17 (27%)	19 (35%)	1 (33%)
S ₇	Hills were formed by birds flapping wings to scatter sand	38 (61%)	41 (75%)	2 (67%)
S ₈	Worms developed from oil and garbage	31 (50%)	45 (82%)	2 (67%)
S ₉	Life forms were created all at once, in the past	41 (66%)	49 (89%)	2 (67%)
S ₁₀	Fish fell from the sky when it was raining	52 (84%)	49 (89%)	2 (67%)
S ₁₁	Frogs fell from the sky when it was raining	30 (48%)	30 (55%)	1 (33%)
S ₁₂	Oduduwa created dry land out of ocean through sand scattered by a bird	18 (29%)	20 (36%)	1 (33%)
S ₁₃	Lizard evolved from snake	43 (69%)	40 (73%)	2 (67%)
S ₁₄	Birds emerged in the sky	14 (23%)	21 (38%)	2 (67%)
S ₁₅	Gorilla developed gradually from humans	52 (84%)	48 (87%)	1 (33%)
S ₁₆	Soil was created by Obatala	20 (32%)	31 (56%)	2 (67%)
S ₁₇	Plants were created by Obatala with Orunmila as counselor	20 (32%)	31 (73%)	2 (67%)
S ₁₈	Soil was created due to the bursting of the earth ball	19 (31%)	18 (33%)	1 (33%)
S ₁₉	Man was created by the Supreme God in a lump	51 (82%)	50 (91%)	2 (67%)
S ₂₀	Humans were created in the sky and then lowered to the earth	53 (85%)	50 (91%)	2 (67%)

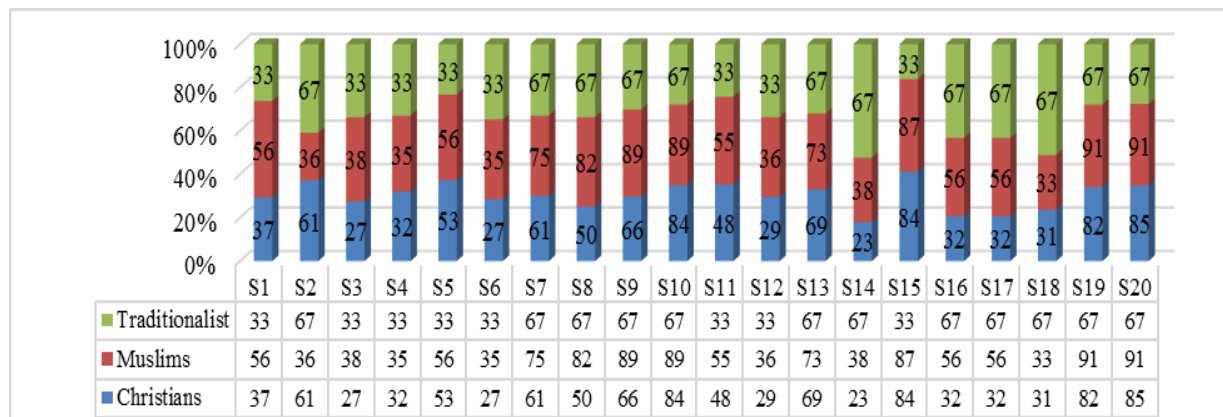


Figure. 3: Graphical representation of Superstitious Beliefs on Evolution Held by Christian, Muslim and Traditional Religion Students



Research Question 3: what is the influence of parental educational background on the superstitious beliefs in evolution held by senior school students in Osun State?

Table 3 and the graphical representation in Figure 4 indicated that students with parents who had tertiary education held seven superstitious beliefs on evolution S₃, S₄, S₉, S₁₂, S₁₃, S₁₅, and S₁₈. Students whose parent had only secondary qualification held ten superstitious beliefs on evolution which were; S₁, S₂, S₃, S₄, S₆, S₇, S₈, S₉, S₁₃, and S₁₈. Students who said their parents had only primary education held thirteen superstitious beliefs which were: S₇, S₈, S₉, S₁₀, S₁₁, S₁₂, S₁₃, S₁₄, S₁₅, S₁₇, S₁₈, S₁₉ and S₂₀. Fifteen superstitious beliefs were held the students whose parents had no formal education at all. These beliefs were: S₂, S₃, S₆, S₈, S₉, S₁₀, S₁₂, S₁₃, S₁₄, S₁₅, S₁₆, S₁₇, S₁₈, S₁₉ and S₂₀. It could be inferred that students whose parents had no formal education held more superstitious beliefs compared to those whose parents had tertiary, secondary and primary education.

Table 3

Superstitious Beliefs on Evolution Hold by Students based on parental educational background

Superstition (N)	Belief	Tertiary N = 28 (100%)	Secondary N = 48 (100%)	Primary N = 25 (100%)	No Education N = 19 (100%)
S ₁	Earth was formed from a rolling ball in the sky	10 (36%)	32 (67%)	10 (40%)	10 (53%)
S ₂	Earth was created by Obatala (god) and Oduduwa (the progenitor)	8 (29%)	30 (63%)	12 (48%)	12 (63%)
S ₃	Earth emerged in Stages like pregnancy in the womb	18 (64%)	32 (69%)	10 (40%)	14 (74%)
S ₄	Earth developed from an ancient (comic) egg	20 (71%)	31 (65%)	12 (48%)	10 (53%)
S ₅	Cosmic tree supported the earth during its creation	8 (29%)	10 (21%)	10 (40%)	8 (42%)
S ₆	Lakes/ivers were formed in pits dug out by animals	10 (36%)	33 (69%)	13 (52%)	12 (63%)
S ₇	Hills were formed by birds flapping wings to scatter sand	8 (29%)	31 (65%)	20 (80%)	11 (58%)
S ₈	Worms developed from oil and garbage	15 (54%)	34 (71%)	20 (80%)	14 (74%)
S ₉	Life forms were created all at once, in the past	20 (71%)	38 (79%)	21 (84%)	15 (79%)
S ₁₀	Fish fell from the sky when it was raining	8 (29%)	18 (38%)	20 (80%)	12 (63%)
S ₁₁	Frogs fell from the sky when it was raining	4 (15%)	17 (35%)	19 (76%)	11 (58%)

S ₁₂	Oduduwa created dry land out of ocean through sand scattered by a bird	17 (61%)	28 (58%)	21 (84%)	14 (74%)
S ₁₃	Lizard evolved from snake	18 (64%)	32 (67%)	20 (80%)	14 (74%)
S ₁₄	Birds emerged in the sky	8 (29%)	18 (38%)	19 (76%)	12 (63%)
S ₁₅	Gorilla developed gradually from humans	21 (75%)	28 (58%)	21 (84%)	12 (63%)
S ₁₆	Soil was created by Obatala	9 (32%)	15 (31%)	13 (52%)	13 (68%)
S ₁₇	Plants were created by Obatala with Orunmila as counselor	9 (32%)	16 (33%)	20 (80%)	14 (74%)
S ₁₈	Soil was created due to the bursting of the earth ball	21 (75%)	31 (65%)	20 (80%)	13 (68%)
S ₁₉	Man was created by the Supreme God in a lump	8 (29%)	17 (35%)	19 (76%)	14 (74%)
S ₂₀	Humans were created in the sky and then lowered to the earth	7 (25%)	18 (38%)	18 (72%)	13 (68%)

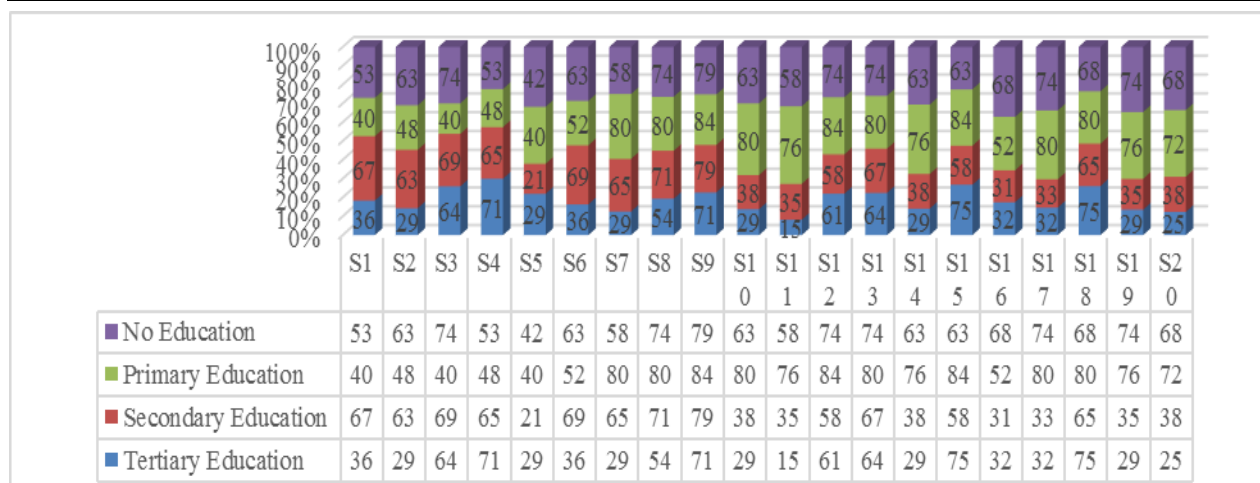


Figure. 4: Graphical representation of Superstitious Beliefs on Evolution Held Students based on parental educational background

Discussion

The present study investigated superstitious beliefs on evolution held by senior secondary school students in Osun state, Nigeria. The first finding revealed that most of the superstitious beliefs on evolution held by senior school students aroused from the origin of life forms while only few were traceable to the transition of life from one form to another. This finding may be attributed to the believe system among the Yorubas that Oduduwa was the progenitor of all lives while Ile-Ife a town in Osun State is the source of all life forms. Students of Yoruba descent in South-west Nigeria are exposed to this belief system at home by their elders and within the four walls of the classroom by Yoruba language teachers. In addition, the Nigerian Junior Secondary school Yoruba curriculum content give credence to the origin of life and not the transformation of lives from one form to another



and this might have been responsible for the high clusters of superstitious beliefs based on origin of life forms among SSS 1 students.

This finding is in consonance with the study of Olawepo, Abimbola and Ahmed (2014) where the researchers observed that biology related superstitious beliefs were prevalent among the people of Isin Local Government Area of Kwara State, Nigeria. The finding also corroborates the conclusion of Foster and Kokko (2009) that superstition is an inevitable feature of the adaptive behaviour of all organisms, including human beings. The finding also tallies with the submission of Olorundare (1998) that students sometimes bring their superficial cultural beliefs and alternative conceptions into the classroom. The level of agreement in the findings of existing related literature with the present study might be because at the upper basic level of education (junior secondary school), students are required to offer one Nigerian language as part of the core requirement. Hence, students of Yoruba descent are taught the historical antecedents of the origin of life base on the Yoruba belief system which they hold as preconception on the evolution of life before entering the senior secondary school.

The second finding from this study reveals that there were variations in the number of superstitious beliefs on evolution held by students based on religion with the Traditional religion having the highest number as compared with Christianity and Islamic religion. This finding may be attributed to the fact that superstitious beliefs on evolution held by students are usually traceable to the tradition of the society in terms of religion and belief in the supernatural. Thus, in the present study, students who practiced traditional religion held more superstitious belief on evolution due to the locale (Osun State) which is believed to be citadel of all creations and home to several deities most especially, the Osun goddess. This finding corroborates with Kose (2010) who found out that the theories of evolution were rejected by students based on their strong religious inclination. It also agrees with the findings of Woods and Scharmann (2001), and Delphonso (2018) who in their individual studies observed that religious belief was a factor that strongly shaped biology students' attitudes and acceptance of non-scientific pre-conceptions about evolution.

The third finding indicated that students whose parents had no formal education held more superstitious beliefs compared to those whose parents had tertiary, secondary and primary education. This finding was specifically due to the inability of parents with no formal education to help unlearn the superstitious beliefs on evolution held by their wards because such parents most times uphold such beliefs as the basic truth about the evolution of life. The result of the above finding is in conformity with the work of Ogbugo-Ololube (2015), and Khan, Iqbal and Tasneem (2015) who discovered that parents' level of education influences students' academic achievement. It however, contrast with the finding of Osuafor and Okonkwo (2013) who conducted a study on the influence of family background on the achievement of secondary school biology students and found out that no relationship existed between students' academic achievement in biology and parents' level of education.

Conclusions

It can be concluded from the findings of this study that senior school students held superstitious beliefs on evolution most which were related to the origin of life. Results from this study also indicated that students who practiced Traditional religion held more superstitious beliefs on evolution than those who were Christians and Muslims. In addition, students whose parents had no formal education held more superstitious beliefs on evolution compared to those whose parent had tertiary, secondary and primary education. Hence, religion and parents educational background influences the superstitious beliefs on evolution held by senior school students' in Osun State, Nigeria.

Recommendations

Based on the findings the following recommendations were advanced:

1. Teachers should adequately understudy the superstitious beliefs on evolution held by senior school students so as to help students unlearn such superstitious beliefs before or during classroom instructions.
2. The theories and principles of organic evolution should be included in the Nigerian Junior Secondary school integrated science curriculum so as to expose students to the science-based conceptions of organic evolution before their entering into the Senior Secondary school.
3. The monistic views of members of the society about religion which encourages fight for supremacy, superstitions, fanaticism, and non-scientific beliefs should be discouraged and substituted with a more dualistic belief about nature and the natural world.
4. Parents with no formal education should be mandated to attend adult classes to boost their knowledge and reduce their level of mythical and monistic beliefs about nature and the natural world.

Limitations of the Study

The present study focused on senior secondary school one students in government owned secondary schools. Thus, the findings may not be generalizable to students in private owned schools. In addition, the content was limited to evolution; hence, findings cannot be generalized to other science subjects. Furthermore, it is possible that the research assistants were biased despite the training they received before the commencement of the study. This may be due to their disposition towards the study and other personality traits. Therefore, questionnaires may be used to supplement the structured interview so as to elicit appropriate information on students superstitious beliefs on evolution.



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