











**Research Question 2:** what are the perceived incentive needs of biology teachers?

**Table 2 :**

**Teachers Perceived Incentive Needs.**

	N/o	N	Sum	Mean(x)
1.	Provision of accommodation to school	250	714	2.86
2.	Needs for marking WEAC, NECO, NABTEB, e.t.c	250	709	2.84
3.	Sponsorship by government to attend seminar and workshop both in and outside the state.	250	708	2.83
4.	Giving grant to teachers so as carry out research	250	698	2.79
5.	Provision of conducive office accommodation	250	698	2.79
6.	Need for increasing rate of promotions	250	697	2.79
7.	Preparation of allowance for senior secondary school certificate practical examination	250	683	2.73
8.	Different salary structure from other teachers	250	609	2.44

Table 2 shows the biology teachers perceived incentive needs based on their mean score in descending order. The highest rank incentive needs is provision of accommodation closer to the scale with (2.86) while the lowest incentive needs on the scale is different salary structure from other teachers with (2.44), both still falling under highly perceived incentive needs.

**Research question 3:** Does gender has influence on biology teacher perceived academic needs? This translate to the corresponding hypothesis ( $H_{O1}$ ) which state that

#### **Research Hypothesis 1**

There is no significant difference between the perceived academic needs of male and female biology teachers. A chi-square analysis are conducted to determine where there is a significant difference or not the findings are presented in table 3

**Table 3:**

**Chi-square test on perceived academic needs based on gender**

	Value	Df	Asymp.sig.(2-sided)
Pearson Chi-square	6.191	2	.045
Likelihood Ratio	6.335	2	.042
Linear – by - Linear Association	5.9521	.015	
N of valid cases	250		

a.0 cell (.0%) have expected count less than 5 . the minimum expected count is 5.86.

The result in table 3 shows  $X^2(2)=6.191, P=0.045 < 0.05$ , which means that there is a significant difference between the perceived academic needs of male and female teachers on academic needs on biology teachers because the P-value(0.045) is less than 0.05. Therefore the null hypothesis is rejected

#### **Research Question4:**

Does gender has influence on biology teachers perceived incentive needs?

#### **Research hypothesis 2:**

There is no significant difference between the perceived incentive needs of male and female biology teachers.

In response to this, a chi square test was conducted to determine if there is a significant difference between the perceived incentive needs of male and female biology teachers, the finding are presented in table 4

**Table 4:**  
**Chi- square Test on Perceived Incentive Needs based on Gender.**

	Value	DF	Asymp.sig(2sided)
Pearson chi-square	.180	2	.914
Likelihood Ratio	.180	2	.914
Linear-by-linear Association	.023	1	.880
N of valid Cases	250		

a.2 cell(33.3%) have expected countless than 5. The minimum expected count is 4.39.

The result in table 4 show that  $X^2(2) = 0.180$ ,  $P = 0.914 > 0.05$ , which means that there is no significant different between perceived incentive needs of male and female biology teachers because the P-value (0.914) is greater than 0.05, therefore the hypothesis is not rejected.

#### **Research Question 5**

What influence does experience of biology teachers` has on their perceived academic needs?

#### **Research Hypothesis 3**

There is no significant difference between the perceived academic needs of experience and less experienced biology teachers.

In response to this, a chi-square analysis was conducted to determine whether there is a significant difference between the perceived academic needs of experience and less experienced biology teachers. The finding are presented in table 5

**Table 5:**  
**Chi- square test on perceived academic needs based on teaching experience**

	Value	DF	Asymp.sig(2 sided)
Pearson chi-square	2.065	2	.356
Likelihood Ratio	2.151	2	.341
Linear-by-linear Association	.022	1	.881
N of valid cases	250		

a.0 cell (0%) have expected count less than 5. The minimum expected count is 5.04

The result In table 5 shows that  $X(2) = 2.065$ ,  $P = 0.356 > 0.05$ , which means that there is no significant different between the perceived academic needs of experienced and less experienced biology teachers, this is because the P-value (0.356) is greater than 0.05. The hypothesis 3 is not rejected.

#### **Research Questions 6.**

What influence does experience of biology teachers` has on their perceived incentive needs?

#### **Research Hypothesis 4:**

There is no significant difference between the perceived incentive needs of experience and less experienced biology teachers.

In response to this, a chi-square and analysis was conducted to determine whether there is a significant difference between the perceived incentive needs of experience and less experienced biology teachers. The findings are presented in Table 6.

**Table 6**  
**Chi-square test on perceived incentive needs based on teaching experience**

	Value	DF	Asymp. Sig.(2.sided)
Pearson chi-square	.303	2	.860
Likelihood Ratio	.309	2	.857
Linear –by- linear Association	.160	1	.689
N of Valid Cases	250		

a.1 cell (16.7%) have expected count lees than 5. The minimum expected count is 3.78.

The result in table 6 show that  $X^2(2) = 0.303$ ,  $P = 0.860 > 0.05$ , which means that there is no significant different between the perceived incentive needs and teaching experience because the P- value (0.860) is greater than 0.05. Therefore hypothesis 4 is not rejected.

**Research Question 7:**

What are the perceived academic needs of private and public schools biology teachers?

**Research hypothesis 5:**

There is no significant difference between the perceived academic needs of private and public schools biology teachers.

In response to this, a chi- square analysis was conducted to determine whether there is a significant difference between the perceived academic needs of private and public school biology teachers. The findings are presented in Table 7.

**Table7**  
**Chi-square test on perceived academic needs based on school type**

	Value	DF	Asymp.sig.(2.sided)
Pearson chi-square	1.898	2	.387
Likelihood Ratio	1921	2	.383
Linear-by-linear Association	1.215	1	.270
N of Valid Case	250		

a.0 cells(0%) have expected countless 5. The minimum expected count is 5.76

The result in table 7 shows that  $X^2(2) = 1.898$ ,  $P = 0.387 > 0.05$ , which means that there is no significant difference between the perceived academic needs of private and public schools because the P-value (0.387) is greater than 0.05. Therefore hypothesis 5 is not rejected.

**Research question 8:**

What are the perceived incentive needs of private and public school biology teachers?

**Research Hypothesis 6:**

There is no significant difference between the perceived incentive needs of private and public schools biology teachers.

In response to this, a chi-square analysis was conducted to determine whether there is no significant difference between the perceived incentive needs of private and public school teachers. The finding are presented in Table 8



**Table 8:**  
**Chi-square test on perceived incentive needs based on school type**

	Value	DF	Asymp.sig(2 sided)
Pearson chi-square	2.744	2	.254
Likelihood Ratio	2.768	2	.251
Linear-by-linear Association	.126	1	.723
N of Valid Cases	250		

9.2calls (33.3%)have expected count less than 5. The minimum expected count is 4.32

Table 8 shows that  $X^2(2)=2.744, P=0.254 > 0.05$ , which means that there is no significant difference between the perceived and incentive needs of private and public school, because the value (0.254) is greater than 0.05. Therefore hypothesis 6 is not rejected.

## DISCUSSION

Almost all research that worked on needs agreed that needs affect performance both positively and negatively. Modupe(2005) (Lilia, Kamisah, Subahan, & Meerah, 2006), Champman 2007, (Dengda & Zhu, 2009) and Olugbuyi 2011 e.t.c. Positively in the sense that its increase the teachers productivity if their needs are met, which will influence their performance in teaching biology and students performance in learning science(biology) and vice versa.

From the result, for all the items of both academic and incentive needs, were perceived by biology teachers as highly important needs because none of the items were far below the average mean score of 1.5. This shows that all the teachers were in agreement with both contents of academic and incentive needs with the lowest mean score been 2.67 for academic needs and 2.44 for incentive needs. This is above the average mean score of 1.5.

The result shows that school type and teaching experience as variable shows no significant differences exist with both academic and incentive needs. This is so because the null hypothesis for both academic and incentive needs for school type and teaching experience, shows no significant differences and the research hypothesis is not rejected. This shows that regardless of school type and experiences, teachers perceived the content of the needs of academic and incentive needs as highly needed needs. This is in agreement with findings of Modupe (2005) and Olugbuyi 2011.

Gender as a variable, shows that there is a significant difference between the perceived academic needs of male and female biology teachers, this is because the null hypothesis is rejected, while for gender on incentive need, the null hypothesis is accepted, this is because there is no significant difference between the perceived incentive needs of male and female biology teachers.

Most teachers wanted need to update laboratory with microscope, aquarium, herbarium and other biology specimen, increase in period allotted for biology teaching, available of resource personnel in the laboratory, need for marking, WAEC, NECO, provision of accommodation closer to school, and also wants sponsorship to attend seminar, conferences etc by government within and outside the state.

Modupe (2005) listed some needs as priority needs, which are a necessity for a science teacher, these needs include in-service training, allowance, liberty to decide on class organization, involvement in evaluation of students. Modupe (2005) needs are also peculiar to the needs of this study which are in-service training, classroom organization decisions, allowances and to evaluate students.

Idris (2002), Modupe (2005), Lilia et al, (2006) and Olugbuyi (2011) believe that in-service training is essential for science teachers to be effective in the classroom. It had been shown in this research that in-service training is a major and common need between male and female biology teachers. All these are in agreement with the findings of this study.

## CONCLUSION

This study assessed the academic and incentive needs of senior secondary school biology teachers in Kwara State, it was found out that all the items on both academic and incentive needs were perceived as highly important needs because none of the items were below the average mean score. Some of the reason for these, in the opinion of the biology teachers was that all the items on the both academic and incentive needs falls under the major needs of science teacher particularly biology teachers which if in place increase biology teachers productivity. Other reason was that biology teachers needs will enable teachers to see themselves as important stake holders in the education system and that these will improve science teaching specifically biology teaching.

All teachers regardless of their sex, experience and school type believed in all the content of the questionnaires as needs that could trigger them to increase their productivity and enhance effective and efficient teaching and learning process.

## RECOMMENDATIONS

The following recommendation is suggested based on the finding of the research.

1. Effort should be geared towards providing more academic need for male and encouraging female biology teachers on academic needs, such as use of instructional resources for teaching, furthering their studies in related field in biology and frequent in-service training and re-training. Male and female biology teachers' academic needs should also be reinforced. Biology teachers should member of professional non-governmental organization such as STAN, so as help them to grow academically
2. Government should give grants to biology teachers to carry out practicals with the view of solving various problem and challenges facing science education.
3. Government should sponsor biology teachers to attend workshops seminars, conferences at local, state and international levels. So as to enrich them academically and increase their classroom productivity.
4. The rate of promotions of science teachers particularly biology should be increase, this is to spur them highly to perform both effectively and efficiently.
5. Finally, government should fund properly science education since it is the bedrock of national development and technological advancement.

## REFERENCES

- Abimbola, I.O., (2009). A brief history of teaching: In I.O Abimbola & A.O Abolade (Eds) , fundamental principles and practice of instruction. A publication of the Department of Science Education University of Ilorin, Ilorin, Nigeria.
- Abimbola, I.O., & Omosewo,E.O.(2006). History of science for degree student. Ilorin, Nigeria . Oyiwola press
- Abimbola, I.O., Olorundare , A.S., Omosewo E.O ., Ahmed M.A., Upahi, J & Yahaya , L.A., (2011). Way forward forSTEM Education, Reforms in STEM Education Proceedings of the 52<sup>nd</sup>Annual conference of the Science Teachers Association of Nigeria. (STAN). HEBN Publisher Plc.
- Acohor, E.E. (2003). Cognitive correlates of physics achievement of some Nigerian senior secondary students.Journal of the science teachers Association of Nigeria, 38(1&2). 10-15.
- Adeniyi, I.O., & Oluokun, I.G., (2001). ICT and emerging paradigm for lifelong learning, AU IEA Education Assessment infrastructure Goal and Practices Project in Twenty- Six Countries.

- Adeyanju, L., (2003). Teachers' perception of the effects and use of learning aids in teaching: A case study of Winneba basic and secondary school. Institute of Education, Obafemi Awolowo University, Nigeria.
- Ahmed, M. A., (2008). Personality factors and biology lecturers' assessment of difficulty levels of genetics concepts in Nigeria Colleges of Education. Unpublished Ph.D. thesis Department of Science Education, University of Ilorin, Nigeria.
- Ajayi, S.O. (1991). A survey of laboratory maintenance practices in secondary school in Kwara State. Unpublished M.Ed.project, Department of Curriculum Studies and Education Technology, University of Ilorin, Nigeria.
- Akuogbuo, C.N., (2002). Problems of poor performance of secondary school biology students. Nigeria journal of Curriculum Studies, 7(1), 53-55.
- Chapman, A., (2007). Abraham Maslow's original hierarchy of needs concept. 1954: man rich Bassett. Concise Oxford English Dictionary. (2005). 11<sup>th</sup> edition. Oxford University Press, New York.
- Dengda, S., & Zhu, O., (2009). Teachers' incentive Mechanism in china. China Ideological & Educational press.(23).
- Ezeliora, B. (2002). Effects of improvised material on achievement in chemistry among secondary students. Journal of teacher Education. 8(1&2), 421.
- Figlio, D. N., & Kenny, L. (2006). Individual teacher incentives and student s' performance Cambridge, MA: National Bureau of Economic Research Inc.
- Gough, I., (1994). Economic institution and the satisfaction of human needs. Journal of Economic Issues, 28(1), 2566.
- Horan, P. (2012). The importance of science in modern society. Retrieved December 6, 2012, from [www.seachresult.com/web](http://www.seachresult.com/web) .
- Honderich, T. (2005). The Oxford Companion to Philosophy. Oxford: Oxford University Press.
- Idris, M.D., (2002). A study of the needs of Malaysian Primary Science Teachers. Unpublished Masters Degree project, Faculty of Education, University Kebangsaan Malaysia, Malaysia.
- Lilia, H., Kamisah, O., Subahan, T., & Meerah, M.,(2006). Trends and Issues of Research on in-service need Assessment of science Teachers: Global Us the Malaysia context. Faculty of education, University of Kebangsaan Malaysia 43600, Malaysia.
- Modupe, M.O. (2005). A factor-analytic study of some of the Nigeria science teachers' needs assessment . Journal Research in Education, 73, 87-98.
- Ogbeba, J.A., (2009). Effects of prior knowledge of instructional objective on senior secondary school students' Motivation and achievement in biology. Unpublished Ph.D thesis faculty of Education, Benue State University, Makurdi.

Okebukola, P.A.O.(1997). The state of science Education in Nigeria. Paper presented at the ELLSA- British Council Primary Science Forum, Kaduna, Nigeria.

Olugbuyi, P.O., (2011) Senior secondary school Chemistry teachers' perception of their needs in Ondo state, Nigeria. Unpublished M.Ed research Project. Department of Science Education, University of Ilorin, Ilorin.

The Oxford Advanced Learner's Dictionary (2007). 7<sup>th</sup>Edition. New York : Oxford University Press.

The Oxford English Dictionary (2005). 5<sup>th</sup> Edition New York Oxford University Press.

The Pocket Oxford Dictionary (1994) .Walton Street Oxford: Oxford University Press.