RELIGIOUS AND MORAL EDUCATION (RME) TEACHERS’ TECHNOLOGICAL CONTENT KNOWLEDGE BASE IMPACT ON STUDENTS IN JUNIOR HIGH SCHOOLS IN GHANA

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Abstract

Religious and Moral Education (RME) is an indispensable subject in the Ghanaian educational enterprise. The study was conducted to find out teachers’ technological content knowledge in the teaching of Religious and Moral Education (RME) in Aowin municipality in the Western Region of Ghana. The descriptive survey was the design for the study. The population included all (RME) teachers in the Aowin municipality. However, a sample population of 33 RME teachers were used for the study through simple random sampling technique. The data was organized into tables, frequencies, percentages and means in line with the research questions which guided the study. The study revealed that teachers generally had the technological competence in teaching RME but these competencies were mostly manifested in their use of lower levels of technology. Teachers also possessed adequate content knowledge of RME which they appropriately displayed in class. However, the teachers had little knowledge in the Islamic aspect as compared to the other aspects of RME. The study recommended that the Ghana Education Service organize intensive In-service training for teachers on the need to integrate technology in teaching RME. It also recommended that teachers read more on the Islamic aspect of RME in order to have adequate knowledge on it. It was finally recommended that the teacher preparation programme should provide opportunities for potential teachers to learn more skills in integrating technology and content skills in teaching. Consequently, supervisors in basic schools including head teachers, circuit supervisors should strengthen their supervisory roles on what teachers do in the classroom rather than concentrating on what teachers say they can do or are doing.

Keywords- Religious and Moral Education (RME), Teachers, Technological, Content, Knowledge, Junior High Schools, Aowin municipality, Ghana.

1. Introduction and Background

This paper presents the outcome of the Religious and Moral Education teachers technology and content conceptions and their classroom practices in the Junior High Schools in Ghana. The paper is structured into five (5) main sections namely; the Introduction, Review of the Literature, Methodology, Findings and Discussion and the Conclusion. The first section introduces the structure of the paper, the context and aims and objectives of the paper. The literature review section reviews the relevant literature on issues
pertaining to teachers’ curriculum conceptions and its influence on curriculum implementation in religious and moral education. The methodology section presents a broad description of the methodology and procedures adopted in the conduct of the study. Findings resulting from the study are presented and discussed in the section following the methodology and conclusions with recommendation.

Religious and Moral Education (RME) is an indispensable subject in the Ghanaian educational enterprise. It is an academic subject or discipline that is integrated by nature. It is integrated because it deals with the themes Religions, Morality and Education. It also integrates Christianity, Islamic and African Traditional Religion. The subject seeks to assist students to develop positive attitude and values, so that they can make sound moral judgments in issues that confront them (Asare-Danso, 2011). The subject has a very long historic perspective and as to how it is being taught in Ghanaian basic schools with total neglecting of the aims and rationale for teaching in the Ghanaian context. Generally, the teaching of RME in Ghanaian basic schools seeks to reinforce the informal religious and moral training young children acquire at home as its rationale (MoE RME Syllabus, 2008).

Not disputing the current rationale for the teaching of RME in Ghanaian basic schools, it is quite undisputable that, the teaching of RME in current Ghanaian basic schools has a memorable and traceable history. The beginning of the teaching of Religious and Moral Education in Ghana could be traced to the pre-colonial era when religion became an integral part of Traditional African Education. The study of Religion in traditional African societies was done by acquiring knowledge of the Supreme Being, ancestors and deities through proverbs, folktales, songs, and myths, just to mention but few. Then came the era of the colonial period where the castles that were serving as trading post were used for the establishment of the castle schools (Smith, 1966). Religious Instruction (R I) became an integral part of the castle school curriculum. The missionaries followed with the establishment of mission schools and Religion was part of the mission school curriculum. The Basel mission for example, established their first school at the Christiansburg castle Osu in 1828 (Smith 1966, Odamtten 1978). Religion became a core curriculum in the mission schools.

Foster (1965), described the mission attempt to provide religious, moral, technical and vocational education in the country as a remarkable one. One major aim of the mission schools was to enable their congregation to read the Bible and to use the hymn book. It was also the aim of the mission to train Africans to become teachers, catechists and pastors. The missionaries built schools of different kinds, provided their own text books (including the Bible) and curriculum materials and these formed the basis for the content of curriculum in the schools for the teaching of the subject then.

Religious and Moral Education continued to be part of the school curriculum in the Gold Coast during the colonial period. Under the colonial governor Sir Gordon Guggisberg, he outlined sixteen principles of Education, which was presented to the legislative council in 1925. The 7th and 8th principles made provision for the teaching of Religious and Moral Education. Whereas the 7th principle provided that character training must take
important place in education, the 8th principle provided that religious teaching should form part of the school life (McWilliam & Kwamena-Poh, 1975, p.57).

In the 1961 Education Act, provision was made to put the teaching of Religion either during the first or the last period on the school time table. This conscience clause was to give room for parents who did not want their children to study the subject to withdraw them from the class during the lesson period (Ministry of Education Report, 1957, p.10). Subsequently, in 1962 the government of Ghana under President Kwame Nkrumah decided to separate the teaching of Religious Education from Moral Education. Consequently, they proposed to introduce moral teaching in place of Religious Education in the Basic School curriculum (Asare-Danso, 2012). This change however, could not be effected and Religion continued to be taught under the title ‘Religious Knowledge’ (R K) in the basic schools.

In 1974, the Dzobo committee that reviewed the then educational system in the Gold Coast recommended that, Religion should be taught under the title ‘Cultural Studies’. This subject was an integration of three disciplines, namely Religion, Social Life or Culture and Music. During the implementation of the 1987 Educational Reform, Cultural Studies (C S) was completely withdrawn from the basic school curriculum. This meant that, Religious Studies was no longer taught as a subject in the basic schools. Religious bodies like the Christian Council of Ghana, the Catholic Bishop Conference and Ghana Pentecostal Council as well as other stakeholders raised objection and petitioned the government to reconsider the issue. Following the concerns raised by the public, a National Education Reform Review Committee (NERRC) was set up in 1994. Based on its recommendation, Religious and Moral Education (RME) was re-introduced (Asare-Danso, 2012).

The 2007 Education Reform under Anamuah-Mensah once again removed Religious and Moral Education from the basic school curriculum but it was reinstated in the following academic year in 2008 following the objections raised by the Ghanaian public and civil society groups (Ministry of Education Report, 2008). The history traced on the subject RME as well as the focus, role and aims of the early Christian missionaries vividly depicts an intensive indoctrination of pupils/students in schools than to teach it as a subject to educate learners since the entire subject was so much focused on convention of learners into their churches than to impart knowledge. This was in actual sense not different from the perspectives and principles of the then teacher education in the country. Shulman (1987) cited by the Cambridge University (Institute of Basic Education) UK, in collaboration with the Ministry of Education, Ghana in a recent research work on Transforming Teacher Education and Learning (T-TEL) in Ghanaian Colleges of Education (2014-2018) emphasized that ‘Teacher Education in Ghana has focused too much on ‘content knowledge‘ than to integrate it with technology and effective pedagogy’. To them Ghanaians assumed that the content area (such as Science, Mathematics, RME, Social Studies etc.), teachers would be able to successfully teach their students.
It is obvious and undisputable fact however, that practitioners have come to recognize the need for teachers to combine varied and different forms of knowledge so as to ensure effective teaching bearing in mind that teaching is now both ‘art’ and ‘science’. Knowing the content which deals with the ‘what’ and ‘why’, is not enough for teachers to able to teach effectively. Teachers however, must possess both ‘technological’ and ‘pedagogical’ knowledge to enable them meet this globalized World of technological and pedagogical sophistication in teaching and learning (Shulman, 1987). Again, Kleiner and Lewis (2003) assert that considering the recent advancement in technology Worldwide, teaching should be seen more of science than just an art.

The present Religious and Moral Education (RME) curriculum in Ghana consists of the three major religions in the country and many other contemporary and social issues. This coupled with the modern advancement in technology in teaching therefore, calls for teachers’ in-depth knowledge in technological and content knowledge of the area to be able to deliver accordingly. However, personal observation as a teaching practice co-coordinator seems suggests that teachers do not have adequate technological and content knowledge to teach the subject as expected hence, resulting in problems in delivering their lessons. Teachers’ technological and content knowledge in the teaching of the subject tends to be limited because they do not know which technologies to use when dealing with various topics in RME. Lessons were mostly characterised by the teacher giving out information and lengthy time spent on copying notes. T-TEL Report (2014) confirms my observation. Indeed, technology in RME instruction can be likened to a sleeping giant (Martorella, 1997).

Modern thinking about instruction requires that teachers integrate technology into their instructional activities (T-TEL, 2014-2018). In a developing country like Ghana, it could be said without any hesitation that research on teachers’ technological content knowledge of RME teaching in diverse class has not been given the needed attention it deserves, hence, little is known about what is going on in the classroom and the challenges that RME teachers are facing in terms of imparting knowledge to different students with different intellectual abilities, socio-economic background and cultures. The researcher sought to examine teachers’ technological content knowledge in the teaching of Religious and Moral Education in Ghanaian Junior High Schools (JHS). The following research questions guided the study- 1. What is the technological knowledge of JHS RME teachers in Aowin municipality? 2. What is the content knowledge of JHS RME teachers in the teaching of RME in the Aowin municipality?

2. Review of The Literature
Technological Knowledge (TK)
Technological knowledge is always in a state of flux; more than content and pedagogical knowledge (Koehler, Mishra and Cain, 2013). This makes defining and acquiring it notoriously difficult. Keeping up to date with technological developments can easily become overwhelming to time-starved teachers. This also means that any definition of technology knowledge is in danger of becoming outdated by the time this text has been published. There are, however, ways of thinking about and working with technology that can apply to all technological tools, regardless of when they emerge. In that sense, our definition of TK is similar to the notion of Fluency of Information Technology (“FITness”) as proposed by the Committee on Information Technology Literacy of the National Research Council (NRC, 1999). The committee argues that fitness goes beyond traditional notions of computer literacy to require that people understand information technology broadly enough to apply it productively at work and in their everyday lives. Fitness therefore, requires a deeper, more essential understanding of mastery of technology for information processing, communication and problem solving than does the traditional definition of computer literacy. Also, this conceptualization of TK does not posit an “end state,” but rather assumes TK to be developmental, evolving over a lifetime of generative interactions with multiple technologies.

The assertion raised by the above scholars is in the right direction. This is so because we are living in a dynamic world where everything is going technological. It is as a result of this that Harris (2008), mentions that ‘it is a high time all teachers worldwide gain insight into the use of technology and blend them in their teaching’. This opinion is equally supported by Hughes, (2004) who also postulates that the teachers’ knowledge in the use of technology fast-tucks the teaching and learning process and also ensures highly competitive class which is full of happiness. It is therefore, justified on this note that teachers’ knowledge in technological use in their teaching and learning process in the classroom is high significant more especially in the teaching of an integrated subject like RME.

Content Knowledge (CK)
Content knowledge is knowledge about subject matter that is to be learnt or taught including, middle school science, high school history, graduate-level astrophysics and of course Religious and Moral Education. Teachers who do lack content knowledge in their subject areas may not understand the essence of the problem in the syllabus, face the problem of selecting facts that will develop the civic competences of the learners (Bordoh, Eshun, Kofie, Bassaw & Kwarteng, 2015). This made Kankam, Bordoh, Eshun, Bassaw, & Andoh-Mensah (2014), postulates that content knowledge is vital to good teaching, there should be courses on subject content so as to develop teachers’ knowledge about the subject to enhance effective teaching.

Knowledge and the nature of inquiry differ greatly among content areas, and it is critically important that teachers understand the disciplinary “habits of mind” appropriate to the subject matter that they teach. As Shulman (1986) noted, content knowledge includes knowledge of concepts, theories, ideas, organizational frameworks, methods of evidence and proof, as well as
established practices and approaches toward developing such knowledge in a particular discipline. In the case of art history, famous paintings, sculptures, the influence of artists' historical and social contexts, as well as knowledge of aesthetic and psychological theories for understanding and evaluating art. The cost of teachers having an inadequate content-related knowledge base can be quite prohibitive; students can develop and retain epistemologically incorrect conceptions about and within the content area (Bransford, Brown, & Cocking, 1999; Pundit & Duit, 2000).

Archambault and Barnett, (2009) also see the content knowledge (C.K) of a subject area to entail all the ideas and philosophies that one need to obtain in that said area. To them, the content knowledge of one’s area of study makes him/her well versatile in that area. For example, one who claims to be a master of English should in a whole exhibit high sense of mastery in the area and this is no exemption of RME. It is therefore worth deducing from the above scholars that, one’s high level of knowledge in a content area makes him to be called a master in the area. In the same vein that teachers teaching RME in Ghanaian basic schools need to have an in-depth knowledge in the area more especially looking at the integrated nature of the subject.

Technological Content Knowledge (TCK)

According to Harris, Mishra & Koehler (2007), technological content knowledge (TCK) includes an understanding of the manner in which technology and content influence and constrains one another. Harris (2008) lamented that, in planning for instruction, content and knowledge are often considered separately. Harris (2008) added that, it is assumed that developing content is what content experts do (i.e. historians develop history and physicists develop physics), whereas technologist develop technologies (e.g. hypertexts overhead projectors) and technology integration strategies. She therefore seems to suggest that, when we think of subject matter that students study in school, we often do not think of curriculum content relationships to the digital and non-digital technologies that learners and teachers use.

Historically, however, technology and knowledge have been deeply connected. According to Harris, Koehler & Mishra (2009), new understanding in medicine, History, Archeology and Physics have been emerged, in part, from the development of new technologies that afford the representation and manipulation of information and ideas in novel and fruitful ways. They added that, using new technologies (or existing technologies in new ways) can prompt fundamental changes in the nature of the discipline themselves. Roentgen’s discovery x-rays, for example, changes both diagnostic processes and the nature of knowledge in medicine. The carbon-14 dating technique similarly revolutionized the field of archeology. Consider also how the advent of the digital computer changes the nature of physics and Mathematics work, placing a greater emphasis upon the role of simulation in understanding phenomenon.

Effective teaching requires developing an understanding of the manner in which subject-matter, specifically; the types of content-based representation that can be constructed within and across disciplines can be changed by the use of different technologies (Harris, et al., 2007). This seems to suggest that, teachers must understand which technologies are best suited for
addressing which type of subject-matter, and how content dictate or shapes specific educational technological uses, and vice versa. Consequently, Harris, et al. (2007) identified three ways in which technology and content have related to one another.

1. The advent of new technology has often changed fundamentally what we consider to disciplinary content. In addition to the examples above, consider how the discovery of radiation changed the way one understands the evolution of life, whereas the invention of hypertext transfer (HTTP) and other internet protocols dramatically changed the ways in which work and communicate. Content (be it physics or engineering or sociology) shapes new technologies and offer new uses for existing technologies, while at the same time the affordances and constrains of technologies shape how this content is represented, manipulated and applied.

2. Technology is not neutral with regards to it effect upon cognition. Different technologies (or media) and engender different mindset or ways of thinking (Koehler, Yadav, Philips, & Cavazos-Kottke, 2005; Mishra, Spiro & Feltovich, 1996). Every new technology, from the telephone to the camera to the digital computer – has had its effects on human cognition. For example, the advent of moveable type and printing in the 15th century was followed by a series of dramatic changes in all aspects of social, cultural, political, educational and scientific life in Europe and, eventually, most of the rest of the World. Many of the effects of the invention and diffusion of print can be traced to certain specific properties of print media. Print created texts that were mobile, immutable, representable and readable, and these properties led to fundamental changes in human cognition (Latour, 1990). They help to ensure that discussions could be carried beyond the conversational arena that predominated in the oral cultures of the time. These print objects allowed ideas to be transported and shared without change, so that they could be encountered in consistent ways that mutable, oral retellings would typically disallow. A similar change—though this time toward increased flexibility and connectivity—can be seen in the emergence of Web-based text that is non-linear, unbounded, and dynamic. This is especially apparent in the so called ‘Web 2.0’ technologies that foster communal and shared document generation.

3. Technological changes offer us new metaphors and languages for thinking about human cognition and our places in the World. Viewing the heart as a pump or the brain as an information-processing machine is just one of the ways technologies have provided new perspectives for understanding phenomena. These representational and metaphorical connections are not superficial. Considering the brain as akin to a clay tablet, for eg, offers a very different view of cognition and learning than considering its similar to an information-processing machine. Having these metaphors and analogies as part of a general cultural consciousness influences how technologies are appropriated for teaching and learning.

3. **Methodology**

The descriptive survey was the design for this study. The population for this study included all the teachers teaching Religious and Moral Education in the Junior High School in Aowin municipality. Simple random sampling technique was used to select thirty-three (33) respondents out of the six-three (63) teaching Religious and Moral Education for the study. Data Collection was facilitated through the administration of
questionnaire and observation. All thirty-three (33) teachers responded to the questionnaires and were further observed while they teach Religious and Moral Education in a classroom setting. The quantitative data entry and analysis were done using the Statistical Package for the Social Sciences (SPSS) version 21. Data were edited, coded and analyzed. Results were presented in tables, frequencies and weighed means with interpretations. The qualitative data was analyzed by the use of interpretative method based on the themes arrived at in the data collection. The themes were related to the research questions and interpreted on the number of issues raised by the respondents. Generally, simple calculations of percentages were used as the main statistical method in analyzing the data.

4. Findings and discussions

4.1 Teachers’ content knowledge in RME lessons

This section sought to find out the technological knowledge that RME teachers have which are relevant to the teaching of RME. Data from two sources were collected to establish teachers’ technological knowledge. These include the responses of the teachers to the questionnaire and observational data from teachers' lessons. The section of the questionnaire that focused on this question had eight items which sought from the respondents the type of technology they use in teaching RME, how they update their technological knowledge and the technical skills they have in using the said technologies. The items were generally written in positive form with the responses on a four-point Likert scale measure with Strongly Disagree (SD) taking “1”, Disagree (D) takes code 2; Agree (A) takes code 3 and Strongly Agree (SA) taking code 4. The individual items relating to the research question were analysed using frequencies, percentages and means. The mean of means was used to analyse the general technological knowledge of the teachers. A mean score range of between 1.0 and 1.50 is indicative of strongly disagree, 1.51 to 2.50 is indicative of disagree, 2.51 to 3.5 is agree and 3.51 to 4.0 is strongly agree. Table 1 presents what teachers claimed they do which indicates their technological knowledge. This was derived from their responses of the questionnaire that was administered to them.

<table>
<thead>
<tr>
<th>Item</th>
<th>Responses</th>
<th>Mean</th>
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<tbody>
<tr>
<td>I use audio materials in teaching</td>
<td>SD (%)</td>
<td>12(36.4)</td>
</tr>
<tr>
<td>I use visual materials in teaching</td>
<td>4(12.1)</td>
<td>4(12.1)</td>
</tr>
<tr>
<td>I use audio-visual materials in teaching</td>
<td>11(33.3)</td>
<td>6(18.2)</td>
</tr>
<tr>
<td>The materials I use in teaching are readily available</td>
<td>7(21.2)</td>
<td>6(18.2)</td>
</tr>
<tr>
<td>I keep up with important new technologies</td>
<td>4(12.1)</td>
<td>2(6.1)</td>
</tr>
<tr>
<td>I know a lot of different technologies</td>
<td>4(12.1)</td>
<td>4(12.1)</td>
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</tbody>
</table>
I have the technical skills I need to use technology 4(12.1) 5(15.2) 13(39.4) 11(33.3) 2.94
I know about technologies that I can use for teaching RME 4(12.1) 3(9.1) 21(63.6) 5(15.2) 2.82
Mean of means 2.65

Results from Table 1 show that, 20 teachers representing 60.6% of the teachers said they do not use audio materials in the Religious and Moral Education Lessons whereas the remaining 13 (39.4%) said they use audio materials in teaching. This implies that, most of the teachers do not use audio materials in their lessons. Also, the mean score of 2.12 indicates that on the average, teachers do not incorporate audio materials in RME lessons. In the same vein, 25 teachers representing 75.6% reported that they use visual materials in the lessons with the remaining 24.6% disagreeing. It also recorded a mean score of 2.85 implying averagely, teachers mostly use visual materials in teaching pupils. It can be elicited that; teachers tend to use more visual materials than audio materials in their which is open for further research. From Table 1, the use of audio-visual materials in teaching by teachers attracted a very close and sharp difference in response. Whereas 17 teachers claimed they do not use audio-visuals in teaching, 16 of them reported otherwise. A mean score of 2.27 however indicates that, averagely teachers do not use audio-visual materials in their teaching. From Table 1, a whopping 81.8% said they keep updating their technological knowledge which is relevant to the teaching and learning of Religious and Moral Education. This implies that, in every ten RME teachers, at least eight of them are abreast with the technology that they can use to teach the content of the subject effectively. A recorded mean score of 2.88 buttresses this claim of the teachers.

Results from Table 1 also shows that most teachers technological knowledge is diverse in nature as 25 teachers representing 75.8% reported that they know different technologies which are applicable to the teaching and learning of RME. This means that, in every four teachers, three teachers have knowledge in more than one RME related technology. On how they can use the different technologies they claimed to know, Table 1 shows that 24 teachers representing 72.7% said they have the technical skills needed to use the technology they know. It can be elicited that, 72.7% of them claimed they have the technical knowledge to the materials out of the 75.8% who claimed to have knowledge about different technologies. This means a small percentage of the teachers have knowledge about the technologies but lack the technical knowledge to use such materials. Arguing in that same line, most of the teachers who have knowledge of the technology to use have the requisite technical skills to use their chosen technology. Twenty-six teachers out of the thirty-three teachers think they can appropriately select the right technology necessary for a lesson. This implies that, they do not only know how to use it but also know where and when to use a particular technology in teaching. The mean of means (group mean) score of 2.65 indicates that, averagely teachers claimed that they have adequate technological knowledge to teach RME in the basic schools. They however showed lack of competence in the use of audio and audio-visual materials in the teaching. Meanwhile, most audio and audio-visual materials seem to be of higher level of technology than just only
the visual materials. This suggests that, teachers' technological knowledge in relation to the teaching of RME is more inclined to the lower level of technology than that of the higher level of technology. This contradicts Archambault and Crippen (2009) who reported that, teachers felt incompetent when it came to the domain of technology.

In order to confirm or otherwise what teachers claimed they know about technology in teaching RME, their lessons were observed to ascertain the level to which they possess technological knowledge. Table 2 presents the results of how teachers demonstrated technological competence in their lessons. Each teacher's lesson was observed twice and scored as either “Not Available”, “Below Average”, “Average”, “Good” or “Excellent” depending on the level in which the said teacher demonstrated technological knowledge.

### Table 2- Teachers’ Technological Practices

<table>
<thead>
<tr>
<th>Item</th>
<th>Response</th>
<th>Mean</th>
</tr>
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<tbody>
<tr>
<td>Source of information</td>
<td>NA(%) BA(%) A(%) G(%) E(%)</td>
<td>Mean</td>
</tr>
<tr>
<td>Medium of lesson delivery</td>
<td>0 47(71.2) 15(22.7)</td>
<td>2.41</td>
</tr>
<tr>
<td>Mode of giving assignment</td>
<td>13(19.7) 47(71.2)</td>
<td>2.05</td>
</tr>
<tr>
<td>Teacher sets up technology himself</td>
<td>60(90.9) 0</td>
<td>1.33</td>
</tr>
<tr>
<td>Appropriateness of technology</td>
<td>32(48.5) 26(39.4)</td>
<td>1.82</td>
</tr>
<tr>
<td>Mean of means</td>
<td>1.97</td>
<td></td>
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</table>

Results from Table 2 shows that, 47 lessons representing 71.2% were scored below average for source of information. This means that such teachers used only the syllabus or a textbook as a source of information for the lesson. Fifteen (22.7%) had an average source of information. Lessons which had their source of information scored as average used several sources including textbooks and the syllabus without resorting to higher levels of technology in getting information like the internet. Only four lessons had their source of information from both the syllabus, textbook and the internet. Such teachers blended both high level technologies with low level technology in order to get comprehensive and up-to-date information for their lessons. Interestingly, every lesson had evidence of the use of technology in getting information for the lesson. However, a mean score of 2.41 of the teachers' source of information was below average implying teachers relying heavily on textbooks and syllabus (low-level technology) for their information to teach RME lessons. Table 2 also reveals that most lessons (57 representing 86.4%) were delivered through low level technology. Also, most assignments, 47(71.2%), were presented through the use of the chalkboard. Interestingly, in 13
observed lessons the students were not assigned to do anything. This implies that such teachers did not employ any technology in assigning the students. However, four lessons had their assignment delivered to students through mails. In effect, most teachers resort to using low-level of technology in assigning students’ tasks. On the issue of the teacher setting up the technology to use for the lessons, 60 lessons representing 90.9% were without any technology that requires the teacher to put to practice their technical competence in technology usage. Only six lessons had higher level being set up and used by the teachers.

As to the appropriateness of the selected technologies, all six lessons which used higher level of technology were appropriate. This explains that when high level technology is blended in lesson delivery, grasping of concepts is easier. In conclusion, a group mean score of 1.97 indicates that the technological knowledge of teachers as practiced in the classroom is below average. This suggests that, their knowledge and use of technology is more related to the lower level of technology than the higher levels of technology. This seems to agree with what they said about their technological knowledge as far as the teaching of RME is concerned. In effect, teachers’ technological knowledge is mostly related to the lower level of materials than in the higher levels of technology. This finding is in relation to the findings of O’Brien (2015) when he opined that teachers did not feel confident about the technical aspects relating to hardware and software issues. Meanwhile, Hughes, (2004) postulates that the teachers' knowledge in the use of technology fast-tucks the teaching and learning process and also ensures highly competitive class which is full of happiness. This implies that any integration of technology into the RME curriculum is not likely to succeed without teachers’ commitment to the use of technology.

4.2 Teacher’ technological in RME lessons

This section sought to find out the content knowledge that RME teachers have which are relevant to the teaching and learning of the subject. The responses of the teachers to the questionnaire and observational data were used to establish the content knowledge of teachers. This section of the questionnaire had 10 items which sought from the respondents the adequacy of their knowledge in the three major religions in Ghana as well as the social and moral aspects of RME. Teachers were also asked if they update their knowledge on RME. The items also sought to establish whether the teachers can relate what they teach in RME to everyday activities. The items were generally written in positive form with the responses on a four-point Likert scale measure with Strongly Disagree (SD) taking “1”, Disagree (D) takes code 2; Agree (A) takes code 4 and Strongly Agree (SA) taking code 4. On the lesson observation, the observer focused on the three aspect of the lesson to measure the content knowledge of the teachers. It looked at the lesson notes of the teacher, lesson delivery and the command of the teacher about what he/she is teaching. Tables 3 and 4 present the results of the content knowledge of the teachers who participated in the study.

<table>
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<tr>
<th>Item</th>
<th>Responses</th>
<th></th>
<th></th>
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<th>Mean</th>
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<tbody>
<tr>
<td>I have adequate knowledge in</td>
<td>SD (%)</td>
<td>D(%)</td>
<td>A(%)</td>
<td>SA(%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>2(6.1)</td>
<td>21(63.3)</td>
<td>10(30.3)</td>
<td>3.24</td>
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Table 3 presents the results of what teachers said they know about the content of RME. Table 3 reveals that 31 of the teachers representing 93.6% claimed they have adequate knowledge about Christian issues found in the RME content. Two teachers however disagreed with the assertion that they had adequate knowledge on Christian issues. A mean score of 3.25 is indicative that most of the teachers have adequate knowledge on the Christianity aspect of RME. Table 3 also revealed similar results for the traditional aspect, moral issues and the social issues. Twenty-five teachers representing 75.7% of the teachers said they have adequate knowledge in the Islamic aspects of RME. Despite the fact that about 75% of the teachers claiming that they have adequate knowledge in Islamic issues, teachers seem to have less knowledge on the Islamic issues as compared to the other aspects of RME. This suggests that most RME teachers do not have a uniform body of knowledge in the major aspects of the discipline. This has implications for their teaching and assessment and consequently building a more tolerant society. Table 3 also reveals that 30 teachers representing 90.9% claimed they used different sources of information and opinions when they are to teach RME. This implies that teachers usually have in-depth and diverse opinions about the content they teach. These diverse opinions add to their store of knowledge about the content of RME. However, three teachers representing 9.1% reported that they do not consult different sources of information.
and opinions before teaching the content of RME. This can result in indoctrination of the students which has implications for the harmony of society.

Also, results from Table 3 indicate that 30 (90.9%) teachers claimed they keep on updating their knowledge base in RME. Three of the teachers however disagreed. This means that most teachers have up-to-date knowledge about the content they teach. There is also indication that that teachers are able to relate what they know about the various aspects of RME to real life situation which is helpful to the students. A mean score of 3.33 confirms their claim of being able to cite practical examples to back the content that they know. To this end, 26 teachers representing 78.8% argued that they have adequate knowledge in the concepts of RME whiles the remaining seven teachers representing 21.2% think they have adequate knowledge about the concepts of RME. The fact that some teachers self-confessed as having inadequate knowledge about the content of RME requires that efforts are made to reduce the impact on the students.

From Table 3, the issue of the content knowledge recorded a group mean score of 3.27 implying that, on the average, teachers have adequate knowledge on the concepts of RME. This knowledge is not evenly distributed among all the aspects of RME with the Islamic aspect as the least as far as content knowledge is concerned. Also, their knowledge about the concepts are in-depth and diverse. To confirm that teachers possess adequate content knowledge, their lessons were observed. Table 4 presents the results of the lesson observation.

<table>
<thead>
<tr>
<th>Item</th>
<th>NA(%)</th>
<th>BA(%)</th>
<th>A(%)</th>
<th>G(%)</th>
<th>E(%)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson notes</td>
<td>6(9.1)</td>
<td>16(24.2)</td>
<td>4(6.1)</td>
<td>4(6.1)</td>
<td>36(54.5)</td>
<td>3.73</td>
</tr>
<tr>
<td>Lesson delivery</td>
<td>0</td>
<td>16(24.2)</td>
<td>8(12.1)</td>
<td>4(6.1)</td>
<td>38(57.6)</td>
<td>3.97</td>
</tr>
<tr>
<td>Mastery of subject matter</td>
<td>6(9.1)</td>
<td>10(15.2)</td>
<td>2(3.0)</td>
<td>5(7.6)</td>
<td>45(68.2)</td>
<td>4.20</td>
</tr>
<tr>
<td>Mean of means</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.97</td>
</tr>
</tbody>
</table>

From Table 4, out of the 66 lessons that were observed, 36 of them representing 54.5% had comprehensive lesson notes with all the essentials of a lesson note expertly catered for. The lesson note is seen as an evidence of teacher preparation and knowledge about what he/she is to teach. Six lessons were however taught without lesson notes. A mean score of 3.73 shows that teachers had good lesson notes. This suggests that there is more room for improvement in the writing of lesson notes. A mean score of 3.97 on lesson delivery shows that, most lessons were systematically arranged and delivered with one concept linked to another. Without firm grasp of the content, it seems difficult to carefully arrange facts and deliver them in a systematic manner. On the issue of what they said whiles teaching, in all the 66 lessons that were observed, 45 of them representing 68.2% had teachers demonstrating complete mastery of the subject matter. A mean score of 4.20 further buttresses the claim of teachers having firm grasp of the content of RME. Groups mean score of 3.97 suggest that,
averagely, teachers displayed adequate knowledge of the content of RME in their teaching. This confirms the claim of the teachers about their knowledge of the content of RME.

In effect, teachers have adequate knowledge on the various aspects of RME. This body of knowledge is as a result of different sources and opinions. This finding is in tandem with the findings of Archambault and Crippen (2009) who developed a survey instrument to measure TPACK for K-12 online teachers and reported that teachers felt confident about their content knowledge. It also in tandem with the findings of O’Brien (2015) and Jordan (2011) who argued that teachers’ content knowledge is more highly rated than any of the other components of TPACK.

5. Conclusion and Recommendations

Though teachers claimed to have adequate technological knowledge, they rarely use it in their lessons. This implies that, a great store of the knowledge of the teacher remains dormant.

Teachers’ content knowledge was not balanced across the various religious traditions. The Islamic aspect of Religion was what the teachers had least knowledge. This imbalanced knowledge of the teachers might lead to indoctrination which is not acceptable.

The study recommended that the Ghana Education Service organizes In-Service Training for teachers on the integration of technology into the teaching of RME. It is also recommended that teachers read more on the Islamic aspect of RME in order to have adequate knowledge in Islam. The researcher further recommended that teachers vary their motivational strategies in their day-to-day activities in the classroom. They should also ask questions that demand that students employ their higher order thinking skills.

References


