Utilization factors of Mobile Communication Technology (MCT) for Creating Opportunities for Reflection and Collegiality for Professional Development Purpose of Technology Teachers in Anambra State of Nigeria

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ABSTRACT
Most mobile phones in the recent days have applications that perform many digital functions which can be utilized in different ways for educational improvement. Unfortunately, some of Nigerian technology teachers who possess these phones do not know the possibility of utilizing it for their professional development purpose. Hence the need to get them informed. The major purpose of this study was to identify the utilization factors of MCT for creating opportunities for reflection and collegiality among technology teachers in Anambra state for professional development purpose. A research questions and a hypothesis, guided this study. The major findings of the study, among others include: Teachers can use SMS to remind and communicate information to their colleagues about next professional development programme; mobile phones necessitate easy networking for team projects and setting up self-help groups among teachers thereby supporting collegiality; mobile phone enables fast exchange of thought, ideas, and information among teachers and this enhances reflection and collegiality. The study concluded that mobile communication technology which is affordable, cheap, accessible, etc, now posses some enhanced feature which can be used to fill some professional development needs for teachers. It was however recommended among others that workshops and seminars should be organized regularly to create awareness and train teachers on the capabilities of mobile phones and how to use the features for educational purposes.

Keywords: Mobile Phones, Professional Development, Teachers, Opportunities, ICT Utilization and Anambra State.

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1. BACKGROUND OF THE STUDY
Educational systems keep changing with change in time around the world. In the recent years, many societies are engaging in serious and promising educational reforms. One of the key elements in most of these reforms is professional development of teachers. Societies are finally acknowledging the fact that teachers are the most significant agent in education. The double roles of teachers in these reforms—being both object and subject of change – makes the field of teachers professional development a growing and challenging area, and one that has received major attention during the past few years[3].

2. CURRENT TRENDS
Current trend moves towards integration of technology into educational systems. Professional development of teachers being a key educational element cannot be overemphasized. With the increasing desire for lifelong professional development by academia, the need for supportive handy device becomes prominence. Most teachers of tertiary institutions are constantly on the move and require devices that support their professional development on-the-go. Woukeu [9] noted that typical e-learning systems have failed to provide on-the-go professional development because they are usually situated in fixed environments. They are tailored toward PC based web access and are not customized for mobile devices [5].
Hence mobile communication technology comes in handy to support the on-the-move professional development of teachers. However, professional development is the act of improving teacher’s expertise to improve student’s achievement [5]. This involves the process of letting teachers know a lot about teaching and to work in an environment that allows them know students well. Professional development does not only entail transmission of knowledge and skills, but also refers to analytic and reflective cognitive process. The overall effect of professional development of teachers is that it improves the quality of schools, prepare and support educators to help all students achieve to high standard of learning and development. Professional development surround teachers with a culture and support the structure that encourage professional learning, innovation, experimentation and the collegial sharing of new ideas and practices. FRN [4] pointed out that teachers should continue to take cognizance of change in methodology and in the curriculum.

They should regularly be exposed to innovation in their profession. In this regard, Spark [7] noted that professional development needs of technology teachers should focus among others on updating subject matter knowledge of practicing teachers, improving pedagogical skills, creating opportunities for reflection and collegiality, enhancing sense of collaboration/networking among teachers, establish database for classroom experiences and mentoring, etc. Any professional development program of technology teachers should therefore aim at achieving these needs. On the other hand, mobile communication technologies are modified computers with the features to simplify their usability, accessibility and portability. These devices have the capability of transmitting, processing and receiving data, voice and video signals through wireless link. According to Darby [2], mobile communication technologies can be defined as those technologies which depend upon the broader phenomenon of internet protocol (IP) convergence when data, voice and video travel over a single channel.

The IP contains devices such as internet, which converts the package that belongs to a voice, data or video exchange into the appropriate presentation. Mobile communication technologies combined World Interoperability for Microwave Access (WiMax) and pocket computers. The WiMax enables the acceleration of IP convergence as it brings high rate communication services to relatively inexpensive portable computer devices (the pocket computers). Some available mobile communication devices include Personal Digital Assistance (PDA), mobile phones, personal audio player, handheld audio and multimedia guide, handheld game console etc [6]. However the most commonly possessed and accessed mobile technology is mobile phone locally known as GSM. Advances in mobile phones today which include; intelligent user interfaces, context modeling, wireless communications and networking technologies (WI-FI, Blue Tooth, GPS, GSM, GPRS, 4G) have precipitated their support for the achievement of the professional development need highlighted by Spark [7]. Many countries across the world have involved this cheap and most convenient technology in the improvement of their teacher quality. Nigeria should not be left out. Statistics has shown that four fifth of the practicing technology teachers (both rural and urban dwellers) own mobile phone. This device, has equally been certified the most convenient and cost-effective device for ICT. Although varying educational background such as NCE, B.Sc, etc, could, affect teacher’s proficiency in the use of technologies, these however cannot mar the improvement of their professionalism. Exploration of mobile phone and its features therefore becomes of necessity in order to identify the ways in which it could be used by practicing technology teachers to achieve their professional growth needs.

3. PURPOSE OF THE STUDY

The main purpose of this study is to identify the utilization factors of mobile communication technology for creating opportunities for reflection and collegiality among technology teachers for their professional development purpose.

3.1 Research Questions

The study found answers to this question: In which ways can MCT be used in creating opportunities for reflection and collegiality for technology teachers?

3.2 Research Hypotheses

H01: There is no significant difference in the mean of the responses of teachers in Awka zone and Nnewi zone on the use of MCT in creating opportunities for reflection and collegiality for technology teachers.

3.3 Research Design

The study adopted survey research design. The population of the study comprised all the 137 technology teachers in 10 technical schools in Anambra state of Nigeria. According to the data collected on 3rd March 2008 from the State Education Commission headquarters Awka, there are 10 technical schools in Anambra state which include GTC Umunze (12 technology teachers), GTC Umuchu (12 technology teachers), GTC Umuleri (18 technology teachers), GTC Enuguwagidi (16 technology teachers), GTC UTU (16 technology teachers), GTC Nnewi (14 technology teachers), GTC Nkpor (12 technology teachers), GTC Alor (8 technology teachers), GTC Osamala (3 technology teachers), and GTC Onitsha (26 technology teachers). Since the population of this study is not very large, the study did not make use of sample, rather, the entire population was studied. A researcher designed questionnaire was used for the data collection.
The questionnaire was made of two sections; section A and B. Section A consisted of items on the background information of the respondents while section B was made of items eliciting information on roles of MCT in enhancement of reflection and collegiality among technology teachers. The questionnaire was validated by three experts from Industrial Technical Department, University of Nigeria Nsukka, and two experts in information communication (ICT) from Management Information System, (MIS), University of Nigeria Nsukka. A 5-points Likert rating scale of strongly agree (SA), Agree (A), Undecided (U), Disagree (D), and Strongly disagree (SD) was used with values of 5,4,3,2 and 1 respectively. Mean and standard deviation was used to answer the research questions. In analyzing the hypotheses, t-Test was used.

4. RESULTS

Research Question
In which ways can MCT be used in creating opportunities for reflection and collegiality for technology teachers?

Table 1: Mean and Standard Deviation of Respondents on MCT and creation of opportunity for reflection and collegiality for technology teachers.

<table>
<thead>
<tr>
<th>N/O</th>
<th>ITEM STATEMENT</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Phone enables teachers pass professional development information to their colleagues who do not have another access of getting information and this enhances collegiality among them.</td>
<td>4.28</td>
<td>0.96</td>
<td>Agree</td>
</tr>
<tr>
<td>2</td>
<td>Teachers with time constraints can use mobile phone as their life folder for easy access and reflection on their materials.</td>
<td>4.07</td>
<td>0.86</td>
<td>Agree</td>
</tr>
<tr>
<td>3</td>
<td>Using mobile phones, teachers can share data while maintaining privacy thereby encouraging collegial interaction.</td>
<td>4.12</td>
<td>0.77</td>
<td>Agree</td>
</tr>
<tr>
<td>4</td>
<td>Mobile phone can enable teachers capture experiences (videos and pictures) in any setting which they can reflect on and share with colleagues for professional development purpose.</td>
<td>4.14</td>
<td>0.90</td>
<td>Agree</td>
</tr>
<tr>
<td>5</td>
<td>Teachers can use SMS to remind and communicate information to their colleagues about next professional development programme.</td>
<td>4.69</td>
<td>3.63</td>
<td>Agree</td>
</tr>
<tr>
<td>6</td>
<td>Mobile phone can act as tool that allow teachers to chart and reflect on changes in a learner overtime thereby encouraging teachers’ reflection for student’s academic welfare.</td>
<td>4.25</td>
<td>0.91</td>
<td>Agree</td>
</tr>
<tr>
<td>7</td>
<td>Mobile phones necessitate easy networking for team projects and setting up self-help groups among teachers thereby supporting collegiality.</td>
<td>4.61</td>
<td>3.38</td>
<td>Agree</td>
</tr>
<tr>
<td>8</td>
<td>Mobile phone enables fast exchange of thought, ideas, and information among teachers and this enhances reflection and collegiality.</td>
<td>4.77</td>
<td>4.41</td>
<td>Agree</td>
</tr>
<tr>
<td>9</td>
<td>Teachers can use mobile phones to provide study tips, reminder and alert for themselves and this supports collegiality among them.</td>
<td>4.41</td>
<td>0.70</td>
<td>Agree</td>
</tr>
<tr>
<td>10</td>
<td>Mobile phone can be used to provide quick administrative information among teachers for collegial meeting.</td>
<td>4.45</td>
<td>0.60</td>
<td>Agree</td>
</tr>
</tbody>
</table>

Table 1 shows that all the framed items were agreed by the respondents to be roles of MCT in enhancement of reflection and collegiality among technology teachers in technical schools in Anambra state.
4.1 Hypothesis

\[ H_{01} : \text{There is no significant difference in the mean of the responses of teachers in Awka zone and Nnewi zone on the use of MCT in creating opportunities for reflection and collegiality for technology teachers.} \]

There are numerous educational zones in Anambra state, among which include Awka and Nnewi zones. Among the respondents, sixteen (16) came from Awka zone while thirty six (36) came from Nnewi zone. The responses of each of the groups were recorded and the mean and standard deviation of each of the group were calculated.

<table>
<thead>
<tr>
<th>S/N</th>
<th>AWKA</th>
<th>S.D_1</th>
<th>NNEWI</th>
<th>S.D_2</th>
<th>t-cal</th>
<th>Sig (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>4.00</td>
<td>0.89</td>
<td>4.25</td>
<td>0.88</td>
<td>-0.92</td>
<td>0.36</td>
</tr>
<tr>
<td>2.</td>
<td>3.63</td>
<td>1.15</td>
<td>4.06</td>
<td>0.72</td>
<td>-1.62</td>
<td>0.11</td>
</tr>
<tr>
<td>3.</td>
<td>3.63</td>
<td>1.26</td>
<td>4.31</td>
<td>0.59</td>
<td>-2.59</td>
<td>0.01*</td>
</tr>
<tr>
<td>4.</td>
<td>3.63</td>
<td>1.26</td>
<td>4.31</td>
<td>0.59</td>
<td>-2.59</td>
<td>0.01*</td>
</tr>
<tr>
<td>5.</td>
<td>6.88</td>
<td>10.18</td>
<td>4.34</td>
<td>0.83</td>
<td>1.41</td>
<td>0.16</td>
</tr>
<tr>
<td>6.</td>
<td>3.81</td>
<td>1.22</td>
<td>4.38</td>
<td>0.90</td>
<td>-1.80</td>
<td>0.08</td>
</tr>
<tr>
<td>7.</td>
<td>6.25</td>
<td>9.57</td>
<td>4.44</td>
<td>0.67</td>
<td>1.08</td>
<td>0.29</td>
</tr>
<tr>
<td>8.</td>
<td>4.25</td>
<td>0.78</td>
<td>6.00</td>
<td>8.78</td>
<td>-0.79</td>
<td>0.43</td>
</tr>
<tr>
<td>9.</td>
<td>4.50</td>
<td>0.63</td>
<td>4.50</td>
<td>0.62</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>10.</td>
<td>4.44</td>
<td>0.63</td>
<td>4.50</td>
<td>0.57</td>
<td>-0.35</td>
<td>0.73</td>
</tr>
</tbody>
</table>

N1 = 16,  DF = 46,  * = Significant (reject hypothesis)
N2 = 32,  Level of significance = 0.05

In the analysis, “sig (2-tailed)” are the figures showing the probability/significance level in which the calculated t-value were significant. From table 2 above, the significance levels of all other items except items 3 and 4 are greater than the stated 0.05 level of significance therefore the null hypothesis is accepted. The significance level of items 3 and 4 are less than 0.05 therefore the null hypothesis is rejected.
5. SUMMARY OF FINDINGS

Based on the outcome of the study, the following are the listed major findings of the study.

1. Phone enables teachers pass professional development information to their colleagues who do not have another access of getting information and this enhances collegiality among them.
2. Teachers can use SMS to remind and communicate information to their colleagues about next professional development programme.
3. Mobile phones necessitate easy networking for team projects and setting up self-help groups among teachers thereby supporting collegiality.
4. Mobile phone enables fast exchange of thought, ideas, and information among teachers and this enhances reflection and collegiality.
5. Teachers can use mobile phones to provide study tips, reminder and alert for themselves and this supports collegiality among them.
6. Mobile phone can be used to provide quick administrative information among teachers for collegial meeting.

Carlson [1] however has alike his views with the above when he stated that teachers who develop the necessary skills and knowledge in the effective use of mobile technology for educational purpose have the opportunity to participate in (or lead) topical discussions, conduct and attend course activities; find resources, experts, and new colleagues; and serve as resources for other educators. Backing up this finding still, Thoma [8] had remarked that Teachers do not update their knowledge from one source, rather from different materials put on net by different authors.

6. DISCUSSION

Mobile phone technology is the handiest and simple technology which can be used to support teacher on-the-go professional development. Previous studies have shown that advanced countries have identified the advantages obtainable in mobile phone if utilized for educational purpose. As it was discovered in the literature, the thought of using mobile phone for academics purpose has not been raised in Nigeria. However, the findings of this study revealed the utilization factors of Mobile Communication Technology for creating opportunities for reflection and collegiality among technology teachers for their professional development purpose.

It was found that phone enables teachers pass professional development information to their colleagues especially those in the rural areas who do not have another access of getting information and this enhances collegiality among teachers. Regarding the ways MCT can be used in creating opportunities for reflection and collegiality for technology teachers, more findings where made as follows; Mobile phones necessitate easy networking for team projects and setting up self-help groups among teachers thereby supporting collegiality; Mobile phone enables fast exchange of thought, ideas, and information among teachers and this enhances reflection and collegiality; Teachers can use mobile phones to provide study tips, reminder and alert for themselves and this supports collegiality among them; Mobile phone can be used to provide quick administrative information among teachers for collegial meeting.

7. CONCLUDING REMARKS

Despite supporting reflection, mobile phones have the features that promote collegiality among teachers. Most teachers in Nigeria especially those in the rural areas have these devices and use it for just calling and receiving calls without knowing all its other capabilities. Should the capacities of these devices be explored and be made known to the teachers, their benefit in their professional development programmes will be maximized.

In line with the findings of this study, the following recommendations were made

- Findings of this study should be made available to teachers so as to let them know that their mobile phones can do more than just calls and can be utilized for their professional development purpose;
- Workshops and seminars should be organized regularly to enable teacher know the capabilities of mobile phones and be trained on how to use the features for educational purposes;
- The teacher trainers, in their teachings to meet the demands of the society, should stress the importance of exploring the features of mobile phones and utilize them for educational purpose.
REFERENCES


http://education.guardian.co.uk/elearning/comment/0,10577,1490476,00.html