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USE OF MOBILE PHONE FOR DATA COLLECTION DURING TEACHING PRACTICE ASSESSMENT: PROSPECTS AND CHALLENGES

[1]OLABIMITAN EMMANUEL OLUDARE, [2]MUHAMMAD AMINU UMAR AND [3]YONGO JOSEPH TYOLUMUN
[1, 2, 3]COMPUTER SCIENCE EDUCATION DEPARTMENT, SCHOOL OF SECONDARY EDUCATION (SCIENCES), FEDERAL COLLEGE OF EDUCATION (TECH.) BICHI, KANO

ABSTRACT
Considering the ubiquitous influence of mobile phones on modern society with continuous improvement in their functionalities, and decrease in related acquisition and operating costs, it is not surprising that mobile phones have been employed in a variety of ways to aid data collection efforts around the world. This paper critically x-rays the use of Mobile Phone for Teaching Practice (TP) Data Collection and assessment, to popularize its application towards resolving ambiguous challenges in TP data analysis. It discusses quantification of effective teaching as mean for evaluating teaching practice exercise, identifies several benefits associated with use of mobile devices for data recording and transmission during Teaching practice exercise. Initial cost of designing and launching of assessment form to the database, technology specification for application software built for such purpose among other challenges were identified. Training and retraining workshop is necessary to help users understand detailed procedure of assessment and method of data transmission were advocated.

Keywords: Teaching Practice, Assessment, Mobile Data collection, NCCE

INTRODUCTION
Every profession has its own practical components; the training of lawyers, doctors, engineers, and other well-known professions make adequate provision for practical work which forms an integral part of the total training of the professions. Teaching practice exercise is the practical aspect of the teacher education programme. A sound professional preparation is necessary for successful teaching profession and teaching practice constitutes an important and indispensable component of the process involved in the adequate preparation of professional teachers.

Teaching practice has been defined by Ndagi (2014) as the exercise which those training for teaching or any education work are engaged for a specified period of time before graduation under a supervisor or supervisor guiding, directing and assessing trainee teacher. The student teacher's expectation include mastering of subject matter before going to classroom and starts to teach. It is a very important scheme which has been in existence since the introduction of education course in Teacher Training Certificates (T. T. C.), Nigeria Certificate in Education (N. C. E.), etc. These programmes make teaching practice compulsory and no candidate is awarded certificate in Education without teaching practice during training. Teaching practices is the most important element in the professional training of teachers across the world. The importance of teaching practice in teacher education programme cannot be overemphasized. It is the crucial periods of translating the theory into practice. Teaching practice is a period during which a student teacher is assigned to a specific

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institution; primary or secondary school for a supervised teaching as one of the requirements for graduation and effective teaching experience. Okorie in Agusiobo and Udegbe (2018) defined teaching practice as a period that enables student teachers to learn about the actual work of the teacher in the classroom as well as out-of-class experience.

Teaching practice provides the laboratory where a student practicalizes what he/she had learnt concerning effective teaching. Teaching practice is an important factor in preparing students for future teaching assignments. According to National Teacher Institute (NTI), teaching Practice manual (Patience 2013), the general objectives of teaching practice are to enable the student teachers:

a) Gain general experience both academic, professional, social and physical related to teaching profession.
b) Acquire a wealth of practical experience from all staff they are likely to be in contact with through active participation in the school assigned responsibilities.
c) Have direct contact with such significant issues as the functions and responsibilities of various categories of school, staff academic and non-academic.
d) Develop competence in proper lesson preparation delivery and assessment. To achieve the above objectives, the student teacher is usually required to undergo at least twelve weeks teaching practice to enable him/her to acquire the expected skills which will position him/her as a competent professional teacher.

ASSESSMENT OF TEACHING PRACTICE EXERCISE: QUANTIFICATION OF EFFECTIVE TEACHING

Quantification of effective teaching has been made possible by National Commission for Colleges of Education (NCCE). NCCE (2005) in Joy-Telu, H.E. (2016) came up with a unified assessment format for the assessment of teaching practice exercise which is now popular in teacher training institutions in Nigeria. This has helped to erase the erroneous conception that teaching cannot be effectively evaluated because of its multifaceted dimensions (i.e. the occurrence of several activities at the same time in the classroom) as a result the exact weighting to attach to different activities and competences were not uniformed.

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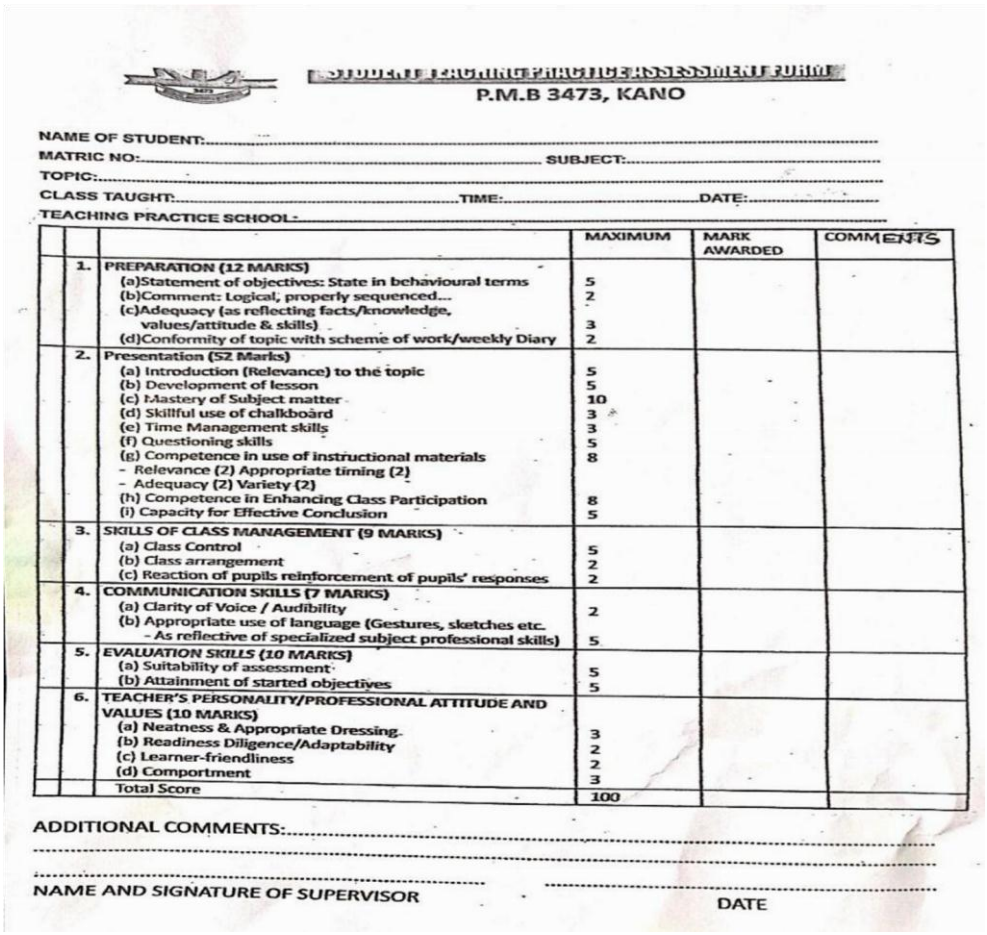

P.M.B 3473, KANO

NAME OF STUDENT:.....
MATRIC NO:..... SUBJECT:.....
TOPIC:.....
CLASS TAUGHT:..... TIME:..... DATE:.....
TEACHING PRACTICE SCHOOL:.....

		MAXIMUM	MARK AWARDED	COMMENTS
1.	PREPARATION (12 MARKS)			
	(a)Statement of objectives: State in behavioural terms	5		
	(b)Comment: Logical, properly sequenced...	2		
	(c)Adequacy (as reflecting facts/knowledge, values/attitude & skills)	3		
	(d)Conformity of topic with scheme of work/weekly Diary	2		
2.	Presentation (52 Marks)			
	(a) Introduction (Relevance) to the topic	5		
	(b) Development of lesson	5		
	(c) Mastery of Subject matter	10		
	(d) Skillful use of chalkboard	3		
	(e) Time Management skills	3		
	(f) Questioning skills	5		
	(g) Competence in use of instructional materials - Relevance (2) Appropriate timing (2) - Adequacy (2) Variety (2)	8		
	(h) Competence in Enhancing Class Participation	8		
	(i) Capacity for Effective Conclusion	5		
3.	SKILLS OF CLASS MANAGEMENT (9 MARKS)			
	(a) Class Control	5		
	(b) Class arrangement	2		
	(c) Reaction of pupils reinforcement of pupils' responses	2		
4.	COMMUNICATION SKILLS (7 MARKS)			
	(a) Clarity of Voice / Audibility	2		
	(b) Appropriate use of language (Gestures, sketches etc. - As reflective of specialized subject professional skills)	5		
5.	EVALUATION SKILLS (10 MARKS)			
	(a) Suitability of assessment	5		
	(b) Attainment of started objectives	5		
6.	TEACHER'S PERSONALITY/PROFESSIONAL ATTITUDE AND VALUES (10 MARKS)			
	(a) Neatness & Appropriate Dressing	3		
	(b) Readiness Diligence/Adaptability	2		
	(c) Learner-friendliness	2		
	(d) Comportment	3		
	Total Score	100		

ADDITIONAL COMMENTS:.....
.....
.....
NAME AND SIGNATURE OF SUPERVISOR ..... DATE

Figure 1: Teaching Practice Assessment Form

Experience has shown that this very crucial aspect of teacher education is being confronted with many challenges which have given various stakeholders a lot of concern. For instance, Idowu (2000) observed that the programme is beset with a multiplicity of problems and difficulties confronting student-teachers, cooperating teachers as well as the co-operating schools and the supervisors. He stressed that most of the problems are not resolved even at the end of the exercise. Some of the problems identified include psychological makeup of the trainees, pedagogical preparations, classroom adaptation, and mode and means of assessment. There seems to be controversy among the stakeholders as to what is to be done to revitalise the scheme for the general good of the beneficiaries of education enterprise

Nevertheless, to carry-out the Teaching Practice assessment using the instrument above, TP supervisor can adopt any of the two forms below.

1. Manual Method which implies recording information on printed copy of assessment instrument above using a pen. It is otherwise called Paper and Pencil data collection
2. Electronic method which implies digital method i.e. use of electronic gadget such as phones, computer etc. example is Mobile data collection

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Mobile data collection (MDC) refers to the utilization of existing information technology products such as phones, smart phones, and tablets (hardware), and several different possible programs (software), for data gathering. Mobile data collection (MDC) allows businesses and organizations gathering a lot of quantitative data using mobile devices. MDC eases the collection of data by ensuring that this is directly uploaded to the platform server by the evaluators. Instead of recording information on printed paper using a pen, which is then manually entered into a database for analysis, data is input into a device and exported directly into a centralized database. Therefore, you can reduce the time, resources, and costs used in the task while improving the quality of the information collected.

OPPORTUNITIES ASSOCIATED WITH USE OF MOBILE FOR T.P. DATA COLLECTIONAND ASSESSMENT

Here we will look at why choice Mobile data collection is better than traditional mode (Pen and paper data collection) Some of the benefits include:

1. **Reduced cost**: By reducing or eliminating the need for paper and shorten the time needed by field workers to collect data, you can make some cost savings. Additional savings can be made on printing costs, which can be significant based on student size and number of pages of assessment instrument (imagine the cost of a 2- page assessment form that will be required to assess5,000 Teaching practice students). Subsequently, digital form can be updated or corrected as need arises in the collecting device used, so, the need for reprinting materials no longer applies. It also removes the need for physical forms to be brought to the office. Traditional methods often require "double data entry", where two separate entries is done on the same data which include; data entry carry-out during the supervision exercise and data entries require during result compilation. Eliminating this redundancy adds up to significant cost reduction.

2. **Increase speed of turnaround time; it is seen as the time required by supervisor to turn in their results for necessary action. Mobile data collection** eliminates or reduces un-necessary waiting time, that is the time taken by supervisors in the same group to bring their result together for final computation. As data is entered directly into an electronic form that can be exported into a statistical package or information management system, access to data even become instantaneous thereby making data ready for whatever action needed to be taken in a significantly reduced amount of time since real-time data is instantly uploaded. From a program perspective, the faster turnaround time is significant as it allows better responsiveness to issues like prompt result computation and data analysis for immediate and future us.

3. **Data quality** Use of Mobile data collection ensure the data quality but reducing or eliminating the possibility of error at the point of collection, and in addition to that also, filter down the data. Furthermore, mobile data collection tools allow for validation of the data being entered during the exercise which reduces the chance of inputting errors. It also improves the transparency and visibility of the data thereby reducing the risk of data leaks.

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4. **Benefit of Customizability and added tools** MDC tools generally offer a wide range of customization possibilities. These include but are not limited to different types of questions (all that can be asked using pen and paper), provision of mathematical operators and functions for performing different mathematical calculations, and the addition of multimedia features such as graphics, audio, and video. Examples of these added features include the ability to use audio, graphics or video to improve data collection and using a camera function to capture a photo of a school, audio or video recording of students on practice which may be used as evidence for good performance or used as reference to motivate other students on the field.
5. **Improved control and flexibility of field work** Since Teaching practice Assessment Instrument is generated from mobile devices, assessment instrument can be updated or corrected without necessarily calling the supervisors from the field to come back for a new or corrected assessment form. It is possible to fix small issues in Instrument design such as typo errors, phrased questions, or filter logic. Also real time backend data check and verification is made possible. This method facilitates more efficient two-way communication between management and people working on the field.
6. **Benefit of Safer storage and backup** Paper can get lost, destroyed, or mishandled in many ways, which can create problems later if the data needs to be re-accessed. Digital mobile data, on the other hand, can be easily and inexpensively stored, copied, backed up, and -if needed- encrypted for secure future access. Take for instance, the data collected through mobile device in Federal College of Education(Tech.) Bichi, during Teaching Practice assessment are uploaded to Kobo database in the cloud.
7. **User friendly method:** MDC guides the supervisors through the instrument by presenting the assessment instrument item by item to ensure that all items were attended to. It helps supervisor to spend less effort in making sure that all items are scored accordingly, and thus eliminating error due to oversight which can occur during traditional Pen and paper method.
8. **Use of MDC makes researcher to have quick access to data for necessary research work Mobile** data collection tools can provide a quick response capability as data can be ready for analysis in real time. Accessing data in a timely manner also allow quick responses to adjust certain activities.

Take for instance FCE(T) BICHIKoboCollect platform contains every filled Teaching practice assessment forms domicile in its central database, accessing such data for necessary research work to determine the weakness and strength of both teachers and students involved in this activities with the possibilities of proffering solution to those issues identified

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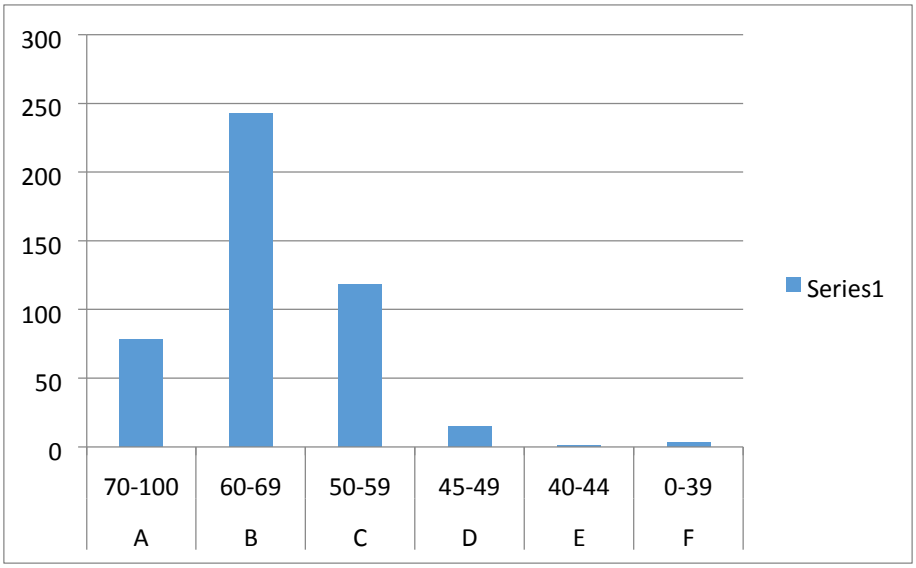

Figure 2.: FCE(T) Bichi 2018 Teaching Practice Performance Chart from Data Retrieved from College Kobo Collect Database

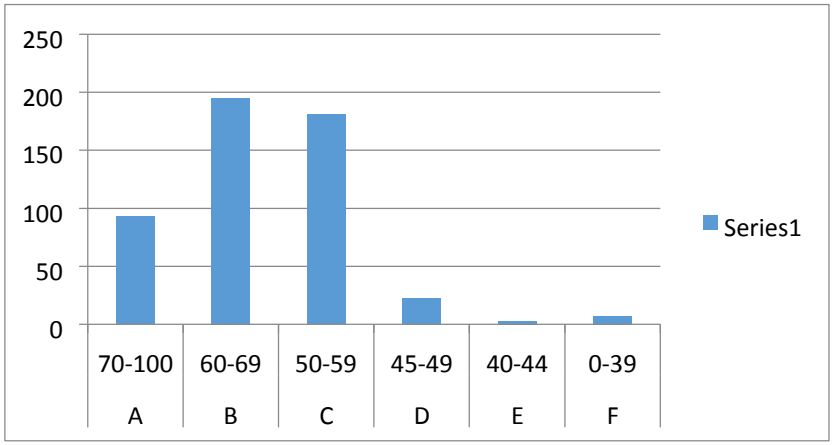

Figure 3: FCE(T) Bichi 2019 Teaching Practice Performance Chart from Data Retrieved from College Kobo Collect Database

The figure below shows the comparison of performance in teaching practice exercise of 2017/2018 and 2018/2019

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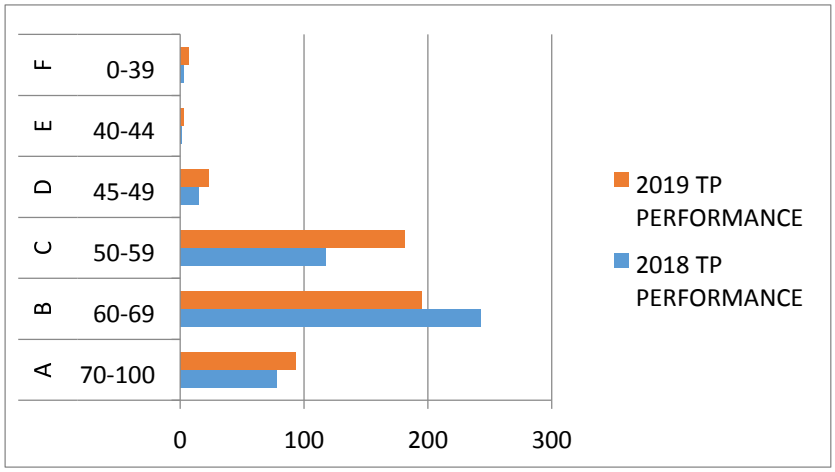

Figure4:Comparison of performance in teaching practice exercise of 2017/2018 and 2018/2019

The table shows the expected performance of TP students of 2018/2019 and the actual score obtained.

Table 1: expected performance of TP students of 2018/2019 and the actual score obtained

S/N	INSTRUMENT CATEGORIES	EXPECTED TOTAL SCORE(502 STUDENTS)	ACTUAL SCORE EARNED	SCORE EARNED %
1	PREPARATION (12)	6024	3877	64.36
2	PRESENTATION (44)	22088	13072	59.18
3	CLASSROOM MANAGEMENT (13)	6526	3874	59.36
4	COMMUNICATION SKILLS (7)	3514	2070	58.91
5	EVALUATION (8)	4016	2265	56.40
6	TEACHER'S PERSONALITY (10)	5020	3649	72.69
7	REFLECTIVE JOURNAL (6)	3012	1744	57.90

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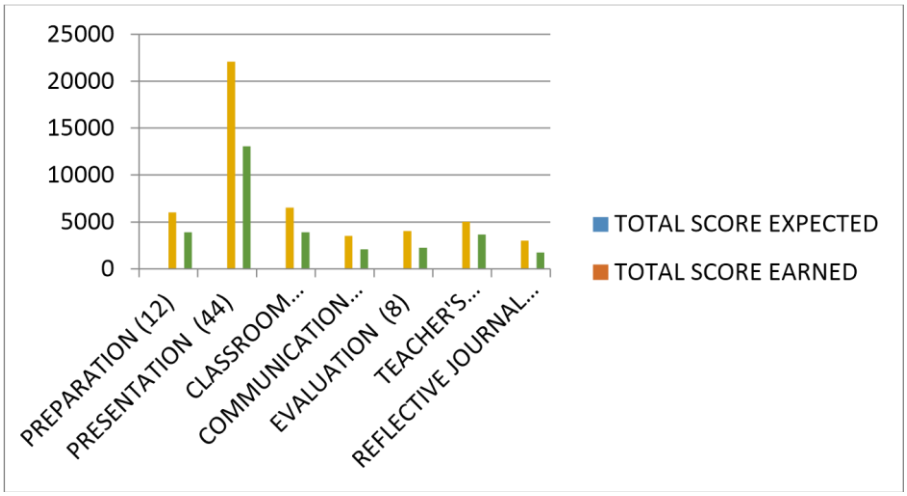

Figure 5: Comparison of expected performance of TP students and the actual score obtained in 2017/2018 and 2018/2019.

9. **Reduced environmental impact** Paper surveys are not environmentally friendly. A simple survey can waste thousands of gallons of fuel, hundreds of thousands of gallons of water, and up to twelve trees.
10. **Data Monitoring**: the utilization of Geographical Point System (GPS) technology of in MDC can record GPS coordinates during data collection which offer the monitoring team an opportunity for remote verification of field data.

To sum it up, Mobile data collection tools offer many exciting and innovative possibilities for improving the quality of Teaching Practice assessment. It enables cheaper and quicker access to a better quality of analyzable data than traditional methods and it allows increased responsiveness to needs arising in the field.

ISSUES AND CHALLENGES ASSOCIATED WITH THE USE OF MOBILE DATA COLLECTION

While data collection via mobile phones may offer advantages when compared with traditional survey and data collection efforts, this is not to imply that such efforts are not without challenges or difficulties. Some common notable issues and challenges include those related to providing examples of concerns that organizations often raise about using MDC, or as reasons not to, as well as effective tips to address them:

1. **Technology specification**: As per what technology should we use? What are the minimally viable specifications required for the devices used in mobile data collection efforts? What software applications are available, and what are their related advantages and disadvantages? Take for instance, the technology specification for Kobo collect for our Teaching practice assessment is Android phone and tablet which implies that any intending Teaching practice supervisor who does not have any of these specified technologies would need to make

provision for a new one for this purpose. This may force people into technology related decision as per the technology for the service of higher order goals versus on-the-ground realities.

2. **Cost:** Start up or initial investment may be too expensive. The costs of designing assessment instruments delivered digitally may be considerably higher when constructing traditional paper-based instrument. In addition, new back-end technology infrastructure may need to be procured and put into place. Where it is not possible for supervisors to utilize their personal phones (whether because such use is not customary or permitted, because existing phones have insufficient functionality or because mechanisms for covering or reimbursing related data transmission costs are not in place), devices may need to be purchased and distributed (and potentially collected once they have served their purpose). Airtime may need to be purchased. (More than a few data collection efforts by mobile phone to 'benefit charities' have foundered because sponsoring groups have wrongly assumed that mobile operators would be quick to donate free airtime 'for a good cause'). Whether or not these costs in aggregate are cheaper than the way things are traditionally done or not – and they often are! – sponsoring groups may have difficulty estimating and budgeting for such costs on the front end, especially the first time they engage in efforts of this sort.
3. **Electronic devices are unreliable**: Devices operate on batteries that run out. If peradventure on way to school or class to carry about assessment exercise, it may fall out of hand to the ground and can break or develop fault, Software may freeze. These are among the common concerns that people may have regarding MDC devices.
4. One of the main limitations of the mobile devices is the difficulty with which text can be typed in, as its keyboards commonly lack 10-finger typing functionality and systems are not amenable to making side notes as most of instrument item may require long comment which may be difficult especially for those who are not use to typing functionality. For these reasons, MDC tools do not currently extend well to qualitative methods, where large amounts of open text need to be gathered. In such projects, the ability to make quick notes with pen and paper still tends to be more efficient and effective.
5. **Training:** It requires Training: Training and explicit instruction may be required, Even though, the tool being used (a mobile phone) is familiar to respondents, in some circumstances additional technology-related training and support may still be required, for example, if an interface is easy to understand, users may not need to spend much time figuring it out. In other words, depending on the nature /procedure of the assessment and the methods of data transmission, additional training may well be required.

CONCLUSION

The experience of many researchers with a large-scale baseline survey indicates that the real-time quality control as well as data collector supervision, enabled by the use of a mobile Phone based survey system makes it a more attractive management option compared to a paper based approach.(Tomlinson, Solomon et al. 2009) This mobile Phone option has the potential to be scaled up in an extensive way for teams and studies of almost any size. The benefits of mobile technology, combined with the improvement

it offers over the manual methods in terms of data loss and uploading difficulties, make mobile phones a feasible method of data collection that needs to be further explored. Rigorous controlled trials comparing data accuracy, readability, reliability, and validity checks comparing paper-based approaches, mobile phones are needed.

RECOMMENDATIONS

a) Even though the initial investment on equipment seem to be expensive, but the equipment may be reused for multiple rounds of data collection and also reused for many years/sessions for which the teaching practice exercise is required.
b) On issue of low battery and other concerns can be addressed relatively easily in the preparation phase. If electricity is an issue, choose long-lasting battery hardware, take extra batteries, (like power bank) and plan places where recharging can be done. Devices do break from time to time, so take an extra device with you just in case. If you are operating a phone, buy shock absorbing cases. Software may cause concerns from time to time, but as long as the programming phase of the project is handled correctly, these issues are generally minimal.
c) Training and retraining workshop should be encourage especially towards the commencement of teaching practice exercise to train new member of staff and refresh the older staff for the task
d) Since Mobile Data collection gives access to poll of student data, we encourage staff to go into research work to proffer solutions to different problems surrounding teaching practice exercise. Especially on yearly bases the Micro teaching unit are supposed to be getting feedback as regard to the performance of the students, this will guide them to identify and work more on area weakness
e) We recommend the use of MDC to all Teaching practice supervisor, for it will go a long way to eliminate the waiting time for submission of final result from individual Teaching Practice supervisor. If all supervisors are compelled to use the KoboCollect, all results will be ready right from the day of supervision as soon as the supervisor upload the filled form

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