

# Design and Development of Mobile Learning Lesson Plan (MLLP) Template: A Design Relevant to African Context

Adedoja Gloria<sup>1,\*</sup>, Abimbade Oluwadara<sup>2</sup>

<sup>1</sup>Teacher Education Department, University of Ibadan, Ibadan, Nigeria

<sup>2</sup>Distance Learning Centre, University of Ibadan, Ibadan, Nigeria

\*Corresponding author: [sadedoja@yahoo.com](mailto:sadedoja@yahoo.com)

**Abstract** Effective planning for instruction is time-consuming and thought intensive. However, planning well up-front pays-off over time. Without effective preparation and planning for a lesson, teaching becomes a gamble. While teachers are not rigid in developing their lesson they must have a clear sense of purpose so that students would not be easily distracted and disinterested. As emphasis is placed on effective planning, it must also be noted that in a digital world, no educational establishment can arguably achieve result without integrating technology into the aspect of lesson planning and execution. Teachers must always keep in mind the extensive potentials of technology in lesson planning. In Sub-Saharan Africa especially in Nigeria, the mobile phone subscription is at an exponential rate but this massive revolution has not translate into its use in the secondary schools due to challenges such as; very large classes and high cost of internet access, inadequate requisite skills, training to embark on mobile learning instruction among others. To surpass these challenges, a simple and cost effective strategy for the teacher to use to plan, develop and deliver their lessons through the mobile phone called Mobile Learning Lesson Plan (MLLP) template was designed and developed. The MLLP template equips teachers to organise, plan, design, and evaluate the lesson effectively. It is a roadmap of what is to be taught using the mobile phone, it allows the teacher to provide detailed information of the lesson and provide sequence of activities that is to be carried out using the mobile phone. Sequel to the development of the MLLP template, it was used and validated by pre-service teachers. Their comments suggest that MLLP template is should be incorporated into teacher training curriculum because it helps in effectively developing mobile learning instruction. This paper assesses the development, validation and uses MLLP template in relations to the cultural context.

**Keywords:** *mobile learning, Mobile Learning Lesson Plan (MLLP) template*

**Cite This Article:** Adedoja Gloria, and Abimbade Oluwadara, "Design and Development of Mobile Learning Lesson Plan (MLLP) Template: A Design Relevant to African Context." *American Journal of Educational Research*, vol. 4, no. 9 (2016): 658-662. doi: 10.12691/education-4-9-2.

## 1. Introduction

Instruction can be defined as specified means of manipulating sequence of events to produce a change of behaviour through learning and this can only happen if the outcomes of learning are specified in measurable and observable terms [1].

In the process of instruction, the instructor must consider three interdependent steps: planning, delivering and assessing. The method of delivering and assessment must have been determined at the planning stage. There must be adequate planning before the instruction and the instructor must critically analyse the learners, and the *media*, using appropriate methods in their interactions to convey the content of instruction in order to realize the desire outcome. Planning helps teachers to:

1. Feel comfortable about instruction, have a sense of understanding and ownership over the instruction.
2. Establish a sense of purpose and subject matter focus

3. Review and become familiar with the subject matter.
4. Ensure that there are ways in place to get instruction started, activities to pursue, and a framework to follow during instruction.
5. Link daily lessons to broader integrative goals, units, or curriculum topics [2].

Planning is an integral part of the instructional process and technology can help the teacher plan instruction effectively. In essence, technology gives opportunity for adaptive remediation and realistic learning activities that could make instruction meaningful. An increasing number of technologies and web applications have been developed over the years, some of them have been used in teaching and learning: Interactive Whiteboard, Multimedia projector, Personal Digital Assistant (PDAs), Tablets, mobile phones, laptop, Ipad, Mp3 and others. Out of these technologies, mobile technology stands out not only because of the kind of connections it offers but also the wide opportunities it has in supporting and extending education in ways not possible before. Mobile learning offers us the opportunity to design learning differently and

to create extended learning communities, to link people in real and virtual worlds, to provide expertise on demand, and to support a lifetime of learning [3]. Providing students with podcasts and integrated formative assessment using mobile technology significantly improved examination performance [4]. In the same vein, Mobile learning has a positive impact on academic performance [5]. Some reasons why this is so, which include: delivery of contents in small pieces, rehearsing and repeating with time intervals, timely feedback, employing multiple inclusive senses, availability of device without restrictions of time and place, multimedia capabilities of new mobile cell phones, employing multiple inclusive sense, providing easier communication between the learner and the learning facilitator in comparison with traditional environment, better use of time, flexibility of this approach compared to traditional learning, more comfortable and finally stress-free relationship with the teacher. It is possible to use SMS technology to support students academically in a limited way [6]. The benefits of mobile phones integration into student learning on campus are useful with the mobile phone capabilities that are easily supporting learning [7].

Planning to use mobile technology for instruction demands more effort from teachers because implementation of mobile instruction is still problematic in Africa [8]. For mobile learning to be impactful, there must be a 'well thought-out plan for embedding mobile devices into instruction is key, develop a well-crafted outline and description of lessons and activities that could be used for learning with mobile devices' [9]. Also, the careful planning is sine qua non to having an effective mobile learning [10].

## 2. Planning Mobile Learning Instruction in Relations to the Cultural Context

The prominent status of mobile phone in Africa especially in Nigeria can be seen in the vast number of people that own the device and also subscribe to a mobile network. This is growing at an exponential rate daily with many people depending on it more than ever before.

Though there is a widespread and evident advantage of using the mobile phone, little is being done in its usage for instructional purpose in secondary school education. Based on an initial survey conducted in Nigeria most pre-service teachers possess mobile phones but not many efforts/initiatives that have been taken to ensure the use of mobile phones especially in secondary school instruction [11]. This can be attributed to some factors that teachers highlight as mitigating factors against the uptake of mobile phones for instruction in secondary schools in Nigeria:

- There are very large classes: The teachers have students as high as 200 to teach in a single class, planning, responding to questions and queries from students and sending learning objects to students could consume a lot of time they cannot afford.
- Internet is still expensive in the country
- Teachers feel students will abuse the opportunity to use the device, they fear students will use it to cheat during examinations, watching and sharing

videos and listen music during school and lecture hours, cyber bullying and others.

- Teachers do not have the requisite skills, training to embark on mobile learning instruction
- Mistrust between teachers and students and teachers and parents such that parents are reluctant to allow teachers contact (be it SMS, or Email) their wards beyond school hours.
- Older teachers show little or no interest in using mobile phones for instruction
- Teachers are concerned that they will not be able to control the language of expression most especially because interactions are done virtually, this they fear could engender indiscipline [11].

All the challenges culminate into a bias against the use of mobile phones for instruction in secondary schools and made school administrators to sometimes evoke outright ban on students using it in school premises. A frantic effort to surmount these challenges means that teachers must therefore plan and structure their mobile learning activities in relations to the peculiarities of the school and the cultural context in which they operate. Sequel to the challenges encountered, there is the need to develop a simple and cost effective strategy for the teacher to use to plan, develop and deliver their lessons through the mobile phone called Mobile Learning Lesson Plan (MLLP) template.

## 3. Theoretical Framework

### 3.1. Constructivism Learning Theory

The study is hinged on the constructivism learning theory. Constructivism is based on the work of Swiss Psychologist and Epistemologist, Jean Piaget (1896 – 1980). Piaget argues that individuals produce knowledge and form meaning based upon their experiences. Classroom applications of constructivism support the philosophy of learning which build students' and teachers' understanding. Learners should constantly be challenged with tasks that refer to skills and acknowledge just beyond their current level of mastery to capture their motivation and build on previous successes to enhance learners' confidence [12].

Teacher should provide multiple modes of representations/perspectives on content as well as create new understandings; via coaching, moderating, suggesting and testing which should be integrated with assigned task and not a separate activity [13]. Further, s/he should use errors to inform students of progress to understanding and changes in ideas. Instead of having students relying on someone else's information and accepting it as truth, the constructivism learning theory encourages that they should be exposed directly to data, primary sources, and facilitated to interact with other students so that they can learn from the incorporation of their experiences. The classroom experience should be an invitation to a myriad of different activities and the learning experience which allows the different activities to come together and observe and analyze information and ideas.

Constructivist learning theory allows the individual to place premium on mobile technology, rather than mobile technology imposing value on the individual. Constructivist

learning theory and planning instruction using mobiles could allow learners more engaged with learning objects. Mobiles augments rather than replaces normal channels of communication, and hence provides unobtrusive support for students. Using mobile technologies to teach allows the learner to apply his or her own experience and/or knowledge in different situation; they can explore their community and make videos, take pictures or create recordings. They can share the resources through several applications.

### 3.2. Design of Mobile Learning Lesson Plan (MLLP) Template

Mobile Learning Lesson Plan (MLLP) template enables teachers to organise, plan, design, and evaluate the lesson effectively. It is a blueprint of what is to be taught using the mobile phone, it allows the teacher to provide detailed information of the lesson and provide sequence of activities that is to be carried out using the mobile phone. Some aspects of the MLLP include the Grade level, topic, instructional objectives, outline and introduction of the lesson, breaking the content into mobile format, identifying the feature(s) on the mobile phone to capture the content, questions and tasks for the students, provision of guiding comments, evaluation, feedback, conclusion and medium to share input. The MLLP template went through series of validation process and the summary of comments by users indicate that the MLLP is a useful, innovative, cost effective and less stressful medium of preparing for mobile instruction and it should be included in the curriculum, they recommend workshops, trainings and it should be made mandatory for schools to use.

### 3.3. Development of MLLP Template

The template of the design starts with the **identification of topics and lesson** to be taught. Other areas include stating; Specific learning ability/disability of learners, Audience analysis (What other things have you observe about your learners that you can build into your lesson?), Learner's preferences. The instructional objectives indicate what learners are supposed to learn.

Ideally, an instructional objective has three main elements:

1. the required terminal behaviour
2. the condition, under which the behaviour will be observed
3. a description of acceptable Standard of performance.

The behaviour involves the learner in doing something that can be *observed* – something that is *visible* or audible – overt actions. This is why such objectives are called *behavioural or performance* objectives. Such verbs are different from *internal state* verbs which cannot be observed – such as understand, know, grasp, appreciate.

The second characteristic describes the type of conditions under which the learner will demonstrate a mastery of the learned skills, idea, attitude, etc.

Standards describe the minimum behaviour the learners must demonstrate for them to be certified as having acquired the skill.

The **brief description/introduction** also displays content knowledge and how the teacher will disseminate

the information to the learners. The content of the information is also provided in the plan.

The **content is broken into frames**. A frame is a small piece of information (content) a student is exposed to per time. This aspect contains the mobile phone application(s) that will be used to capture the content and the reason why the mobile application(s) is selected.

For example, lesson on drug abuse in social studies can be broken into three frames:

#### FIRST FRAME

##### Definition of Drug Abuse

Drug Abuse is the taking of drugs and other substances without the advice and perception of doctors, pharmacists and nurses. These substances could make us sick and they are also produced, sold and used illegally.

#### FRAME 2

##### Examples of Drug Abuse

Taking 6 tablets of pain killers at once

##### Examples of Hard drugs

Heroin, Opium, Indian hemp, Cocaine

#### FRAME 3

##### Consequences of Drug Abuse

- Bad health e.g Cancer
- Poor performances and low grade in school
- Lying, cheating and stealing
- Birth defect and miscarriage
- Destruction of family life
- Leads to high crime rate

##### Phone features:

**Picture:** Provide picture of banned drugs such as Indian hemp, Opium, and heroin.

**Video:** provide video of person(s) taking banned drugs and getting drugs without prescription.

**Medium of delivery:** Send the video and picture to the learner using a chat application/email

##### Prepare Questions/tasks for students

###### Provide Guiding comments for students

Specify the guiding comments that students need to keep in mind in order to accomplish their task, comments such as where students can obtain information and best resources for the lesson.

###### List areas where students can differ in their responses

The teacher must determine the circumstances surrounding the task or the question that may cause the students to differ in their response.

- Is there more than one answer to the tasks?
- The task given to students must have element of students' choice,
- Exercising independence and increasing engagement.

##### Can the difference ideas/responses/information be accommodated and why?

The teachers must recognize that the students may differ in their response, indicate if their different choices can be accommodated.

The section also includes the identification of topics for **group** and **individual** task. The group task will take place among the students with the teacher monitoring them but also giving them a free hand to express themselves. The individual tasks are tasks that the students handle by themselves. The medium of sharing of ideas, collaboration among students/teachers and student/student are also identified.

The teacher must indicate how he/she intend to guide the students through the task and once students have understood their tasks and investigated the background materials necessary to make informed decisions.

Guide them in terms of e.g. sending a reminder SMS, providing a sample video, providing a snapshot etc.

**At this stage:** The teacher present how students can share ideas, the concepts they can interact about can the medium or media that can be used to share information with each other e.g. MMS, SMS, Email, IM services. Students can share on where to get information on the content.

The teacher gives students directions on this task. Be sure that they understand the task by putting forward prompting questions. Do not keep the students guessing.

#### **Medium/ media to share ideas**

- Emails
- SMS
- MMS
- SD card
- IM services. Etc.

The teacher identifies resources that could help the students in their task

#### **Evaluation**

The teacher indicates the criteria for grading the students in their task/activities and prepares evaluation plans that include a rubric to give a grade to the task/activities of the students.

Provide the students with a clear understanding of the grading criteria which will be used to evaluate their efforts.

Provide printed document on the rubrics which will allow students to know upfront what grading criteria will be used. Following are some examples that could be used for a variety of projects.

You will receive an individual grade.

Or

“You will receive a collaborative grade.

Explain how grades will be counted or averaged.

**At this stage,** the teacher provides details on the points to watch out for in the work of the students, points such as: e.g: the appropriateness of the feature and content, the quality of the product, interaction with one another etc.

The points they (students) will get for each response or feedback should be included. (Both individual and collaborative)

Explain to students how the conclusion will offer the opportunity to engage in further analysis. For example:

- i. Ask students how the task given to them could have been interpreted in a different light?
- ii. Ask students if they had interpreted their questions or tasks differently, how might the outcome have changed.
- iii. Ask students what new questions did the issues generate? Why would these new question be important in answering the original questions?

#### **Feedback**

The teacher indicates the mobile phone application that will be used to communicate grades to the students and also explain why they got the grade.

### **3.4. Evaluation of MLLP Template**

#### **Who evaluated?**

140 Pre-service teachers in the faculty of education, University of Ibadan participated in the validation process. The validation took place over a period of 2 academic sessions.

**Table 1. Perception on the adoption of the MLLP template for Instruction**

S/N	Items	SA	A	D	SD	MEAN	STD.D
1	The MLLP template is effective in planning instruction using mobiles	81 (57.4)	38 (27.0)	11 (7.8)	8 (5.7)	3.32	.99
2	The MLLP template is interesting to use	64 (45.4)	52 (36.9)	14 (9.9)	8 (5.7)	3.18	.97
3	Time passed more quickly during planning with MLLP template than other planning techniques	43 (30.5)	51 (36.2)	33 (23.4)	5 (3.5)	2.81	1.11
4	The MLLP template is more enjoyable than instruction planning activities	59 (42.8)	43 (30.5)	21 (14.9)	4 (2.8)	2.91	1.26
5	The MLLP template help me understand the instructional resources more	71 (50.4)	42 (29.8)	23 (16.3)	5 (3.5)	3.23	.96
6	The MLLP template makes the lectures more organized	67 (67.5)	41 (29.1)	28 (19.9)	2 (1.4)	3.18	.95
7	Planning instruction with MLLP template is easier than any other planning technique	79 (56.0)	24 (17.0)	29 (20.6)	6 (4.3)	3.21	1.05
8	The multimedia presentation helps me remember the material needed for instruction	82 (58.2)	37 (26.2)	15 (10.6)	7 (5.0)	3.33	1.02
9	I preferred to use MLLP template to plan my lessons	69 (48.9)	43 (30.5)	26 (18.4)	- (0.0)	3.24	.90
10	The multimedia presentations helps me pay attention more to details	57 (40.4)	62 (44.0)	19 (13.5)	- (0.0)	3.21	.83
<b>Weighted Average</b>		<b>3.16</b>					

The weighted mean average of participants is 3.16 which indicate positive perception. This shows that participants are favourably disposed to using Mobile Learning Lesson Plan (MLLP) Template. Therefore, if there is training on the use of MLLP template on how to apply it in the teaching, it could be rightly expected that learning and teaching will improve.

#### **General comments on the MLLP template**

Many of the pre-service teachers find the section; ‘Sources of information on the resources’ vague and

confusing, this section was therefore removed from the template, More information on how to write good instructional objectives were supplied because many of the teacher trainee were unclear on how to write Instructional objectives. ‘Brief description of the lesson’ was changed to ‘brief outline of the lesson’, because ‘outline’ highlights the subtopics to be taught in the lesson.

Many of the pre-service teachers commented that the section of ‘provision of guiding comments for students’ was unclear. More explanation was supplied to point them

to what is expected from them in this section. The teacher trainees confused ‘**Can the difference ideas/responses/information be accommodated and why?**’ with ‘**List areas where students can differ in their responses**’

‘**Provide criteria for grading which will be based on the student’s effort**’ was included so that students would have the idea of how they were graded in the lesson.

#### 4. Conclusion

The results of the validation process indicates that the pre-service teachers were also able to prepare and create dynamic media to support their lessons for example; screen capture, video clips, still images, audio clips, to mention a view. In the same vein, they were able to break a large content into smaller, interesting and engaging units of content. Also, creating and identifying appropriate media to capture and explain the content of the lesson in order to present the lesson content in a sequential manner. They were to develop engaging activities and tasks for the students so the learner would be actively involved in the learning process. They also provide scaffold and ongoing support to prompt and motivate the students to learn better and enhance their analytical skills. They were able to select appropriate features on the mobile phones to prepare their lessons. They were also able to validate learning experience by designing evaluation procedures for mobile instruction which include the design of rubric for evaluating the students, explain how grades are averaged, and provision of criteria for evaluation. They however recommend that there must be training for all pre-service teachers on the use of the MLLP template. They also commented that it should be included in the curriculum; there must be constant practice and Workshop seminars. Also stating that the MLLP is a useful, innovative, cost effective and less stressful medium of preparing for mobile instruction and it should be made mandatory for schools to use it. Lastly, school

administrators and the government must sanction its use in schools.

#### References

- [1] Balogun, T.A. & Abimbade, A. (2002). TEE 353: Introduction to Instructional Technology. Distance Learning Centre, University of Ibadan. Nigeria.
- [2] Airasian, P. & Russell, M. (2008). Classroom Assessment: Concepts and Applications, McGraw-Hill Higher Education.
- [3] Sharples, M., 2007. Big issues in mobile learning. Report of a workshop by the Kaleidoscope Network of Excellence Mobile Learning Initiative.
- [4] Morris, P. (2010). Podcasts and Mobile Assessment Enhance Student Learning Experience and Academic Performance. *www.bioscience.heacademy.ac.uk/journal/vol16/beej-16-1.pdf*. Volume 16.
- [5] Bidaki, M., Naderi, F. and Ayati, M. 2013. Effects of mobile learning on paramedical students’ academic achievement and self-regulation 3.3: 24-28.
- [6] Hendrikz, O. & Prins, G. (2009). The use of mobile phones in enhancing academic performance in distance education: an African perspective.
- [7] Etoekleous, N. and Ktoridou, D. (2009). Investigating mobile devices integration in higher education in cyprus: faculty perspective. *Cyprus* 3.1: 38-40.
- [8] Dabbs, L. (2012). Mobile Learning Support for New Teachers. <http://www.edutopia.org/blog/mobile-learning-support-new-teachers-lisa-dabbs>. Retrieve 6/10/15.
- [9] Winters, N. (2013). How Teachers in Africa are failed by Mobile Learning. *SciDev.Net.htm*.
- [10] Adedoja G. O., and Abimbade O. A. (2016). Influence of Mobile Learning Training on Pre-Service Social Studies Teachers' Technology and Mobile Phone Self-Efficacies. *Journal of Education and Practice*, 7 (2). Pp74-79. <http://eric.ed.gov/?id=EJ1089740>.
- [11] Adedoja, G.O. and Abimbade, O.A. 2013. Teachers’ Awareness and Readiness for Using Mobile Phones as Support and Tutorial tool in Teaching, Proceeding of Society for Information Technology and Teacher Education Conference. SITE. New Orleans. U.S.A.
- [12] Brownstein, B. (2001). Collaboration: the foundation of learning in the future. *Education* 122.2:240-247.
- [13] Christie, K. 2005. The Internet and inquiry learning: integrating medium and method in a sixth grade Social Studies classroom. *Theory and Research in Social Education* 30:330-53.