

# Mobile-Assisted Language Learning (MALL) Theory

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## **Abstract**

Mobile-Assisted Language Learning (MALL) promotes (1) autonomy of language learner's in their own progress; (2) provides ubiquity in terms of time and milieu in language learning; (3) empowers language learners to be motivated and confident with their language learning achievement; (4) keeps the language learners to be relevant in 21<sup>st</sup> Century Education scheme; and (5) sustains language learners' low affective filter in successfully learning the target language. This study sought to establish and generate a Mobile-Assisted Language Learning (MALL) Theory in order to address the gap in successfully learning a second language. With this purpose, this study utilizes Deductive Axiomatic Approach in theory generation following the steps provided by Padua (2012) as cited by Cabello (2021). There are five (5) axioms construed: (1) Mobile-Assisted Language Learning is widespread used in the 21st Century Education due to its mobility in terms of portability and information accessibility features; (2) Mobile-Assisted Language Learning promotes ubiquity in self-directed language learning; (3) Mobile-Assisted Language Learning increases learner's motivation and confidence to study in all forms of learning milieu; (4) Mobile-Assisted Language Learning improves learner's cognitive capacity and autonomy through personalized learning ; and (5) Mobile-Assisted Language Learning supports students to learn in a friendly and stress -free environment. From these axioms, ten (10) propositions were formulated: (1) Mobile-Assisted Language Learning should support compatibility concerns to various operating systems of mobile devices for optimal utilization of language learners; (2) Mobile-Assisted Language Learning should provide progressive lessons to support Natural Order in language learning; (3) Mobile-Assisted Language Learning should contain immediate feedback of the learner's assessments and responses ; (4) Mobile-Assisted Language Learning should make the learning experience informative, interactive, and fun; (5) Mobile-Assisted Language Learning should suit all forms of learning environment; (6) Mobile-Assisted Language Learning should reinforce independent learning; (7) Mobile-Assisted Language Learning should empower learners to monitor their own progress using their preferred learning pace and style ; (8) Mobile-Assisted Language Learning should maximize learners' avenue to experience meaningful and productive language learning ; (9) Mobile-Assisted Language Learning should amplify learners' skill in educational technology manipulation; and (10) Mobile-Assisted Language Learning should encourage language learners to achieve their learning goals and objectives. With these propositions, the Mobile-Assisted Language Theory is generated. All of the aforementioned elements and characteristics support the usefulness, effectiveness, and practicality of the Mobile-Assisted Language Learning.

**Keywords:** Deductive Axiomatic Approach, Mobile-Assisted Language Learning Theory, Autonomy, Ubiquity, Motivation, Relevance, Low Affective Filter

## 1. Introduction

Today's generation views mobile devices as tremendously valuable resource to supplement classroom instructions, particularly in language learning. With this fact, this offers great advantage of transcending time and place boundaries which allows individuals to interact with peers from another part of the world, as well as accessing learning materials. From this idea, the term Mobile-Assisted Language Learning developed (Turc, 2017).

Mobile-Assisted Language Learning is an approach to language learning that is supplemented or enhanced through the use of handheld mobile devices (Miangah and Nezarat , 2012). Mobile phones can create a better environment for language learning be it via face -to-face, distance or online learning, self- paced or directed learning. They can be easily utilized outside the classroom, and language learners can study or practice manageable chunks of information in any place on their own time, hence, taking advantage of the language learner's convenience (Valarmathi, 2011).

Recently, the current global situation is the serious reason as to why the face-to-face system of education is critically disrupted globally. Because of the pandemic, second language teaching and learning can be difficult for both instructors and language learners. A Mobile -Assisted Language Learning (MALL) Application is needed in order for this be realized. Considering the age of the language students who have passed the ideal stage for effective language learning as specified in the Critical Period Hypothesis of Wilder Penfield and Lamar Roberts, it is essential for a third party educational application to supplement language learning during this non-face-to-face set-up.

In addition, Mobile-Assisted Language Learning does not only promote independent learning and self-improvement monitoring, but this also helps the language students to be exposed in one of the 21<sup>st</sup> century learning schemes (ICT skills) which is the ability to use and manipulate mobile applications.

This study aims to generate a Mobile-Assisted Language Learning (MALL) Theory in order to address the gap in successfully learning a second language.

## 2. Literature Review

### The Concept of Mobile-Assisted Language Learning

In the study of Gangaiamaran, R. and Pasupathi, M. (2017) entitled *Review on Use of Mobile Apps for Language Learning*, the proponents define the concept of Techno-Based Learning. They highlight that in this technological era, everyone has their own handheld mobile devices. Using these devices, with easy access to internet, they interact with people from anywhere in the world. Irrespective of time and place people chat or exchange information with each other. The very term "mobile" stands for the "mobility" or the ability to move freely and easily from one place to another. Mobile learning refers to the implementation of mobile devices in any branch of study. The features of mobile technology such as the portability and information accessibility play a major role in the enhancement of English language teaching and learning.

### In view of Mobile-Assisted Language Learning

Miangah and Nezarat (2012), in their study entitled "Mobile-Assisted Language Learning", Mobile-Assisted Language Learning (MALL) deals with the use of mobile technology in language learning.

In contrast to classroom learning, in MALL there is no need for the learners to sit in a classroom or at a computer to get learning materials. In fact, MALL can be considered an ideal solution to language learning barriers in terms of time and place.

Among all modern communication devices, mobile phones are the most powerful communication medium even richer than email or chat as it can act as a learning device despite its technical limitations. With such a learning device the learner controls the learning process and progress in his/her own space based on his/her cognitive state.

Learning through the computer or e-learning enables the learners to learn in a non-classroom environment when they are at home in front of their personal computers online or offline. However, learning through the mobile phone or m-learning provides the learners with the opportunity to learn when they are in the bus, outside or at work doing their part-time jobs. In fact, they can learn every time and everywhere they are.

Two main characteristics of mobile devices are portability and connectivity. As for connectivity, designing the mobile system must have capability of being connected and communicated with the learning website using the wireless network of the device to access learning material ubiquitously including short message service (SMS) and mobile e-mail.

Portability enables learners to move mobile devices and bring learning materials.

### **On the Use of Mobile-Assisted Language Learning**

In the study of Kacetl and Klímová (2019) entitled “Use of Smartphone Applications in English Language Learning—A Challenge for Foreign Language Education”, the results reveal that m-learning is becoming a salient feature of education as it is a great opportunity and an immense step forward, and it should be supported due to the benefits it brings for language learning. These include: the enhancement of the learner’s cognitive capacity, the learner’s motivation to study in both formal and informal settings, the learner’s autonomy and confidence, as well as the fact that it promotes personalized learning and helps low-achieving students to reach their study goals. Although it seems to be effective overall, it is desirable to design, plan and implement m-learning with caution, according to students’ needs, and to deliver multiple language skills in authentic learning environments.

Another significant study conducted by Liu and He (2014) which is entitled “Using Mobile Apps To Facilitate English Learning For College Students in China” found out that using mobile apps in English learning has positive effect on students. The interview results show that college students hold a positive attitude towards MALL. The results were as follows: (1) The effectiveness of using the selected apps in students’ English learning had been approved. In the research, an experiment was conducted to test it. From the result of quantitative analysis, the participants who received experimental treatments made significant progress on their post-tests, while the participants in the control group didn’t make a significant progress. (2) College students’ attitude toward MALL in English learning was positive. From the qualitative analysis, all interviewees considered that the new learning approach was helpful and effective for majority of Chinese undergraduates to improve their English. They felt motivated, delighted and interested in using mobile apps to learn English by themselves. They all considered that MALL can promote college students in self-regulated cycles of learning. (3) The students in both experimental groups achieved significant improvements in speaking and listening skill by using the two apps: Crazy English and Learn ABC.

According to quantitative analysis, the app, Learn ABC, is better for students to improve their ability of listening. Crazy English is more efficient to practice speaking skill. 4) The students in both experimental groups didn’t achieve a significant improvement in reading comprehension. The quantitative analysis indicates that both apps (China Daily & Huijiang English) don’t have a significant effect on students’ re-

ding comprehension in a short time. It means that the researchers fail to investigate which one is better in improving students' reading ability.

In the study of Siddequa and Ashikuzzaman (2018) entitled “The Impact of Mobile Applications in Developing English Language Skills of Tertiary Level Bangladeshi Students”, the proponents concluded that the 82 students who were the participants of the study were surveyed on various questions. The results indicated that the mobile applications are really very helpful in developing language skills. The use of mobile applications gives them freedom to learn outside the classroom. It helps them learn English in a friendly and stress-free environment. In essence, the findings proved that mobile apps for pedagogical purposes can be exquisite facilitator for the EFL learners. If the learners are encouraged to use the apps by the instructors, the learner will be more benefited and learning will be easier than before.

In the study of Tarrayo, V. et.al., collaborative research entitled “Integrating Internet-Based Applications in English Language Teaching” of Filipino and Thai teachers, concluded that their study addresses one of the most important issues in English language teaching, integration of different Internet- based applications into ELT, specifically in the EFL context. Thus, it presents the teaching practices of seven English language teachers when integrating various Internet-based applications into classroom teaching in a Thai university. Although there may be an abundance of studies about ICT integration into language teaching, specifically the impact of mobile-assisted language learning (MALL) and computer- assisted language learning (CALL) upon students' learning of English, this study offers a fresh perspective on ICT utilization as it investigates EFL teachers' pedagogical practices. An emphasis on showcasing and disseminating best practices in ICT integration for EFL classrooms is timely and relevant, especially in this age of relatively rapid technological and pedagogical development. Various mobile applications for English language teaching may be found to be effective in enhancing the teaching practices of English language teachers as these applications can offer new platforms for and enable new trends in language teaching. Integrating Internet-based applications into the classroom offers comfort, benefits, and assistance to teachers, and furthermore can increase students' active participation in their learning, improve their motivation in language learning, and foster learner independence and autonomy.

In the study of Mauricio C. (2017) entitled “Mobile Phone-Assisted Instruction (MPAI): Exploring the Perceptions of Students And Teachers of Taal Junior and Senior High School”, he concluded, based from the result of his investigation, that students and teachers from the Taal Junior and Senior High School have positive perceptions on Mobile phone-assisted instruction and that they agree in most of the potentials of mobile phones in assisting classroom instruction with only a number of aspects or items of significant differences. Findings also revealed that the participants support the use of mobile phones in the classroom, however, suggesting that it should only be when necessary because of the maturity of the students especially in handling and managing their mobile phones in the classroom. Interestingly, students and teachers' perceptions showed possibilities for integrating mobile phones to assist instruction in the classroom. This is an indication that they are opening the doors for adoption of emerging mobile technologies as learning tools which can be useful for both teachers and learners. It is suggested that these views should be considered in developing or crafting instructional materials that fit this specific mode of delivering instruction. With this, research-based strategies and methods must also be crafted in order to gain optimum benefits these perceived mobile learning tools could offer.

### 3. Statement of the Problem

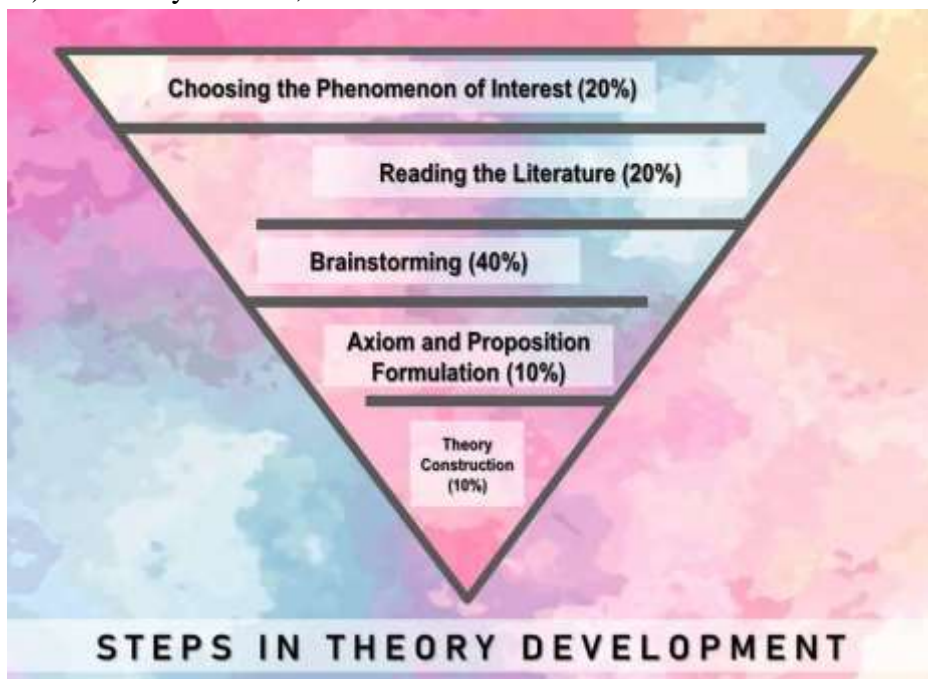
This study aims to establish and generate a Mobile-Assisted Language Learning (MALL) Theory in order to address the gap in successfully learning a second language.

### 4. Research Design and Framework

This study employs Deductive Axiomatic Approach in theory development. Deductive approach begins with the formulation of general ideas down to specific conclusions (Gilgun, 2019). Bayne (2018) labels this approach as top-down thinking which usually starts with different axioms. These axioms are called primitive assumptions or propositions (Delaram & Valilai, 2018).

As deliberated by Marciszewski (1981), axioms are postulates or basic theorems. These are statements that can be accepted in the theory in question without any demonstration from all other statements that the theory was construed (Lehrer, 2018). These axioms are being processed and assimilated into propositions (Zhang et al. 2019). Propositions are the results or product of different axioms. The propositions are established utilizing the appropriate methods. When these propositions are accepted, these will be the basis for the formulation of the theory (Zalaghi & Khazaei, 2016).

In this study, the process in formulating the Mobile-Assisted Language Learning Theory is anchored on the deductive axiomatic approach illustrated below following the steps in generating a theory adapted from Padua (2012) as cited by Cabello, 2021.



**Figure 1. Deductive Axiomatic Approach in Theory Development (Adapted from Padua, 2012 as Cited by Cabello, 2021)**

**Choosing the Phenomenon of Interest.** Choosing the point of interest is very important as this will serve as the focus of the theory development which may have different underlying ideas (George, 2019). Choosing the phenomenon of interest is the first step in formulating a theory utilizing the deductive axiomatic approach.

**Reading the Literature.** Having a focus or point of interest in developing a theory is essential in looking for materials that can substantiate its importance. With this, the reading of the different surveyed materi-

als should be the next step that a theorist should consider as vital (Selden, 2016). This is where the phenomenon can be explicitly discussed, the substance of the point of interest is pervasively elaborated, and lastly, this is where the details are comprehensively laid down in order to broaden the knowledge base on the phenomenon (Bennett & Royle, 2016). The most important reason why reading the literature is necessary because broadening of knowledge base will help contextualize the meaning of the nature of why the theory is being developed. With this, finding solutions and recommendations in addressing the gap would be easy and construing the different axioms and propositions will be strengthened (Mintzberg, 2017).

**Brainstorming.** The process of eliciting pertinent information that will connect other ideas and presents different perspectives which highlights various factors that may contribute in generating the axioms and propositions (Paulus & Kenworthy, 2019). This stage promotes coherence and cohesiveness of information to be used in the process of developing the theory (Henningsen & Henningsen, 2018). Having brainstorming is vital in convergently align facts and related articles to the exemplifying the importance of the phenomenon (Seeber et al., 2017).

**Formulating the Axioms and Propositions.** After gathering and analyzing all related literature and studies, substantially elaborating the significance of all of those surveyed materials, and aligning these facts and ideas convergently, the formulation of axioms and propositions commences (Prasad et al., 2018). Formulating the axioms and propositions are essential phase in theory development. Axioms are basic theorems and primitive assumptions that govern the proposition, while propositions are statements the resulted from the axioms (Novikov, 2011). These axioms and propositions are essential elements in generating a theory.

**Theory Construction.** The final step in developing a theory using a deductive axiomatic approach is the alignment of all the propositions to identify and conclude a theory (Stergiou & Airey, 2018). Theory is composed of interrelated facts and ideas, propositions, concepts, and definitions that pave way in presenting a systematic view of predicting and explaining a phenomenon (Kivunja, 2018).

## 5. Results and Discussion

### *Phenomenon*

The phenomenon examined in this paper is the language learning through the assistance of mobile devices. Mobile-Assisted Language Learning (MALL) is an instructional resource material which helps language learners to learn second language with supervision to less supervision of a language teacher. Several researchers have published various articles regarding the efficiency of Mobile -Assisted Language Learning in terms of its novelty, portability, and ubiquity. In addition, Mobile -Assisted Language Learning is also designed to amplify language learner's engagement using MALL application due to its interactivity

features which also provide real time feedback in terms of one's progress. In spite of its efficacy as supported and claimed by several authorities, there are still several critics that demerit the efficiency of MALL due to several factors like connectivity and compatibility of the application to the mobile device. With this, the researcher would like to develop a theory that will sustain the usefulness, effectiveness, practicality of MALL through a continuous investigation of the essential elements and components that support effective language learning experience. Thus, this paper develops the Mobile-Assisted Language Learning Theory.

### *Axioms*

After collating all the related literature and studies, the researcher draws out some statements which are accepted, established, and proven to be self-evidently true. The following axioms are (1) Mobile-Assisted Language Learning is widespread used in the 21st Century Education due to its mobility in terms of portability and information accessibility features; (2) Mobile-Assisted Language Learning promotes ubiquity in self-directed language learning; (3) Mobile-Assisted Language Learning increases learner's motivation and confidence to study in all forms of learning milieu; (4) Mobile-Assisted Language Learning improves learner's cognitive capacity and autonomy through personalized learning; and (5) Mobile-Assisted Language Learning supports students to learn in a friendly and stress-free environment.

#### **Axiom 1 Mobile-Assisted Language Learning is widespread used in the 21st Century Education due to its mobility in terms of portability and information accessibility features**

The 21st century education highlights the use of educational technology which provides an avenue to the 21st century language learners to enhance this timely skill. Language learning in this time is no longer set in the four corners of the conventional classroom; instead, this can be made possible in any forms of educational settings because of its mobility feature. Mobility in Mobile-Assisted Language Learning stresses its flexibility since this educational resource material can be brought anywhere because it is portable in nature. Smartphones and other handheld devices that serve with the same purpose can be easily carried along by the language learner. Further, the contents or the pieces of information needed for language learning can be accessed anytime regardless whether they are offline or online —installed language learning applications or via educational websites and other similar media. Therefore, Mobile-Assisted Language Learning is widespread used in the 21st Century Education due to its mobility in terms of portability and information accessibility features.

#### **Axiom 2 Mobile-Assisted Language Learning promotes ubiquity in self-directed language learning**

The language teachers in this generation are no longer “sage on the stage”, rather they are now called facilitators of learning. This teaching principle is an instructional strategy where students, with the guidance from the teacher, decide what and how they will learn. With this, Mobile-Assisted Language Learning promotes ubiquity in language learning. This means that language learners can continue to learn a language anytime and anywhere since they are empowered to learn at their own pace which caters their learning speed and learning style. This stimulates language learners to take initiative and monitor their language learning progress, with or without the assistance of others. In addition, this promotes students to track and diagnose their learning needs and formulate learning goals. In other words, MALL supports students to become independent learners. Thus, Mobile-Assisted Language Learning promotes ubiquity in self-directed language learning.

#### **Axiom 3 Mobile-Assisted Language Learning increases learner's motivation and confidence to study in all forms of learning milieu**

Language learning is the ability to acquire the language's major elements in an explicit and conscious manner which are vital for successful and effective utilization of the language (Schutz, 2019). This effectively takes place when the language learner's affective filter is low, which means that the learning experience stimulates motivation and confidence to the language learners to perform better (Krashen, 1988). The learning environment plays a major factor in a successful language learning. This is the upside of Mobile-Assisted Language Learning since this helps students to confidently learn a language

without the feeling of embarrassment in the event they make a mistake during the learning process. Since MALL has also interactive assessments, language students will be given immediate feedback regarding their responses and progress. This is an effective resource material be it in face-to-face set-up, online learning, distant learning, and other forms of learning milieu. Hence, Mobile-Assisted Language Learning increases learner's motivation and confidence to study in all forms of learning milieu.

**Axiom 4 Mobile-Assisted Language Learning improves learner's cognitive capacity and autonomy through personalized learning**

The emergence of Mobile-Assisted Language Learning made successful language learning possible both inside and outside the conventional learning setting since MALL is an effective, easy-to-use, and powerful learning tool in the 21st century. This learning tool has the ability to improve language learner's cognitive capacity since this becomes more accessible, affordable, interactive, and most especially, fun (Ozer, 2018). Integrating MALL with multiple teaching-learning strategies that promote autonomy in learning is necessary for better learning achievement. If the students' learning experience is meaningful, the better and the more successful absorption of learning will take place. MALL advocates Personalized Learning which is also termed Student-Centered Learning, since the general goal is to make individual learning needs the primary consideration in important educational and instructional decisions, rather than what might be preferred, more convenient, or logistically easier for teachers and schools. With this, it is concluded that Mobile-Assisted Language Learning improves learner's cognitive capacity and autonomy through personalized learning.

**Axiom 5 Mobile-Assisted Language Learning supports students to learn in a friendly and stress-free environment**

Mobile-Assisted Language Learning cultivates positive experiences in such a way that scholastic competition is implicitly emphasized and individual progress in language learning is considered more important. Since MALL can provide sufficient learning even with or without the supervision of a teacher, this provides the language learners authentic work in their Zone of Proximal Development. This simply means that the students are empowered to identify what they can do without assistance and what they can achieve with guidance and supervision (McLeod, 2019). MALL makes learning feedback specific, useful, and easy to understand. With this, the learning experience becomes friendly and stress-free. Wrong Feedback can demoralize or confuse students, but the right feedback gives them an obvious place to begin and improve. Therefore, Mobile-Assisted Language Learning supports students to learn in a friendly and stress-free environment.

***Propositions***

The construction of the five axioms led the researcher to construe ten propositions. The se propositions are as follows: (1) Mobile-Assisted Language Learning should support compatibility concerns to various operating systems of mobile devices for optimal utilization of language learners ; (2) Mobile-Assisted Language Learning should provide progressive lessons to support Natural Order in language learning; (3) Mobile-Assisted Language Learning should contain immediate feedback of the learner's assessments and responses; (4) Mobile-Assisted Language Learning should make the learning experience informative, interactive, and fun; (5) Mobile-Assisted Language Learning should suit all forms of learning environment; (6) Mobile-Assisted Language Learning should reinforce independent learning; (7) Mobile-Assisted Language Learning should empower learners to monitor their own progress using their preferred learning pace and style; (8) Mobile-Assisted Language Learning should maximize



learners' avenue to experience meaningful and productive language learning; (9) Mobile-Assisted Language Learning should amplify learners' skill in educational technology manipulation; and (10) Mobile-Assisted Language Learning should encourage language learners to achieve their learning goals and objectives.

**Proposition 1 Mobile-Assisted Language Learning should support compatibility concerns to various operating systems of mobile devices for optimal utilization of language learners**

In order to respond and cater to the needs of the 21st century language learners, the Mobile-Assisted Language Learning is needed to be compatible across all operating systems of various mobile devices. With this, it will responsively serve its mobility feature since it is portable in nature and accessible at any point of time (Axiom 1). With this, MALL will have its optimal use since this supports ubiquity in language learning in which the learners may opt to use the MALL whether in a form of mobile application or via educational website when deemed necessary (Axiom 2). The downside of the MALL if it is not compatible across all mobile devices' operating system is that language learners may encounter limitations to no access to the recommended MALL Applications by the language teachers. This may also cause demotivation or other detrimental effect to the well-being of the language learners due to failure to employ the recommended MALL Application or other related language learning materials with the aid of handheld devices. Hence, this paper proposes that Mobile-Assisted Language Learning should support compatibility concerns to various operating systems of mobile devices for optimal utilization of language learners.

**Proposition 2 Mobile-Assisted Language Learning should provide progressive lessons to support Natural Order in language learning**

Similar to any academic courses, Mobile-Assisted Language Learning is expected to contain well-designed progressive lessons, from basic to complex with appropriate activities and other related assessments, in order to address the procedural way of learning another language. In this manner, it will be easier to the language learners to follow the rules and other language elements needed for successful acquisition of the target language (Axiom 2). If the MALL is designed with random, disorganized, and irrelevant progression of topics, this may cause confusion and abortive language learning. This may also lead to failure on improving learner's cognitive capacity and as well as shaping independence in language learning (Axiom 4). Thus, this paper recommends that Mobile-Assisted Language Learning should provide progressive lessons to support Natural Order in language learning.

**Proposition 3 Mobile-Assisted Language Learning should contain immediate feedback of the learner's assessments and responses**

Language learning is obviously expected to take place if there is immediacy on the feedback of the learner's assessments and responses. In order for the students to have desirable feedback, the facilitator of language learning should set a culture of self-directed learning (Axiom 2). With this, the language learners will be able to (1) set a timeline for completion of activities, (2) identify details about grading procedures, and (3) comprehend feedback and evaluation as each goal is completed. In other words, this creates a learning environment in which students are encouraged to take responsibility in their own progress. Immediate feedback aims to customize learning in order to address students' strengths, needs, skills, and interests. MALL enables the students to take ownership of their own learning (Axiom 4). Therefore, this paper proposes that Mobile-Assisted Language Learning should contain immediate feedback of the learner's assessments and responses.

**Proposition 4 Mobile-Assisted Language Learning should make the learning experience informative, interactive, and fun**

One of the key factors for successful language learning is the learning experience itself. If the learning experience is not satisfying to the students, this may decrease the students' motivation to pursue the learning target (Axiom 3). Mobile-Assisted Language Learning should keep up the students' interest. The level of difficulty should be up to the absorptive capacity of the cognitive readiness of the language learners. In order to avoid monotony in the flow of the lessons, the MALL should be interactive to promote justifiable challenge to the learner's ability. Importantly, to evade from boredom, MALL should be a fun-filled educational material. With this, MALL may support students to learn in a friendly and stress-free learning environment (Axiom 5). Thus, this paper proposes that Mobile-Assisted Language Learning should make the learning experience informative, interactive, and fun.

**Proposition 5 Mobile-Assisted Language Learning should suit all forms of learning environment**

In 21st century education, one of the highlights in the teaching pedagogy is ubiquity in learning. This simply means that language learning is not limited and contained within the four walls of the conventional classroom (Axiom 2). Mobile-Assisted Language Learning should be appropriate with equal level of effectiveness whether it is used in a formal set-up or in an informal learning system (Axiom 3). If the students will encounter unjust experience using MALL when exposed in a different setting, they may feel dissatisfied and will lead to ineffective and unproductive language learning. MALL is expected to provide students with comfortable, at ease, prompt, and motivating learning experience (Axiom 5). Thus, this paper proposes that Mobile-Assisted Language Learning should suit all forms of learning environment.

**Proposition 6 Mobile-Assisted Language Learning should reinforce independent learning**

The 21st Century Education highlights the principle of teaching the students not "what to learn" but "how to learn". This includes the students' selection of time and milieu of learning (Axiom 2). Independent Learning motivates the students to obtain the elements of the target language on their own ways using the assistance of the MALL application or educational website, or other related educational technology (Axiom 3). At the end of the lesson, the language learners who use MALL will be able to ask themselves — (1) How do I know I've learned? (2) Am I flexible in adapting and applying knowledge?; and (3) When do I know that I have learned enough? (Axiom 4). Thus, this paper proposes that Mobile-Assisted Language Learning should reinforce independent learning.

**Proposition 7 Mobile-Assisted Language Learning should empower learners to monitor their own progress using their preferred learning pace and style**

Mobile-Assisted Language Learning intends to facilitate language learning success to the students by allowing them to determine their own needs, interests, and aspirations. The students are allowed to make self-designed learning goals, with the guidance of the facilitator, so the students will not lose their track (Axiom 2). If the students are given the leeway to choose their preferred learning speed and style, their learning achievement will be satisfactory as this promotes learning readiness as highlighted in one of the laws of learning of Edward Thorndike (Axiom 4). Therefore, this paper proposes that Mobile-Assisted Language Learning should empower learners to monitor their own progress using their preferred learning pace and style.

**Proposition 8 Mobile-Assisted Language Learning should maximize learners' avenue to experience meaningful and productive language learning**

Mobile-Assisted Language Learning is expected to stimulate a language learning environment in a way that students will not feel negative and unnecessary pressure, and as well as reluctance in participation (Axiom 3). If the language learners are not ready to actively participate due to lack of internal drive, the learners' ability to comprehend the lessons and monitor one's progress will be put at risk (Axiom 4). With this, meaningful and productive learning experience will fail and may cause stress, disappointment, and other unpleasant psychological effects to the students (Axiom 5). Hence, this paper proposes that Mobile-Assisted Language Learning should maximize learners' avenue to experience meaningful and productive language learning.

**Proposition 9 Mobile-Assisted Language Learning should amplify learners' skill in educational technology manipulation**

One of the skills highlighted in the 21st Century Education is the ability of the learners to manipulate up-to-date ICT skills which include mobile manipulation. Mobile-Assisted Language Learning is a specific educational technology intended for learners to acquire a language independently. This will only be made possible if the language learners know how to manipulate MALL (Axiom 1). If this skill will be successfully and autonomously learned, this immediately promotes confidence in independent learning. The students will also come to realize that this skill can be used in other courses, and this can also be passed on to others (Axiom 2). Educational Technology manipulation also helps the students to study smart. Language learning may be personalized because the students are considered to take part in important educational and instructional decisions (Axiom 4). Therefore, this paper proposes that Mobile-Assisted Language Learning should amplify learners' skill in educational technology manipulation.

**Proposition 10 Mobile-Assisted Language Learning should encourage language learners to achieve their learning goals and objectives**

The main goal of Mobile-Assisted Language Learning is to provide language learners the ability to obtain a second language through implicit or explicit absorption of the target language's elements. The goals will only be reached if the language learners will be able to understand the mobility feature of the MALL (Axiom 1). Further, successful accomplishment of learning objectives using MALL will be made - possible through self-directed language learning since the students are consciously aware of their progress and other related learning milestones (Axiom 2). In addition, if the language learners have motivation and confidence in learning using MALL, this promotes affirmable achievement in the learning of the target language (Axiom 3). Also, if the language learners are empowered and entitled to have autonomy in one's progress in language learning, the learners' cognitive capacity will also be improved (Axiom 4). Lastly, a friendly and stress-free environment provokes students to achieve efficiently their learning targets. Therefore, this paper proposes that Mobile-Assisted Language Learning should encourage language learners to achieve their learning goals and objectives.

## THEORY

Mobile-Assisted Language Learning (MALL) promotes (1) **autonomy** of language learner's in their own progress; (2) provides **ubiquity** in terms of time and milieu in language learning; (3) empowers language learners to be **motivated** and confident with their language learning achievement; (4) keeps the language learners to be **relevant** in 21<sup>st</sup> Century Education scheme; and (5) sustains language learners' low affective filter in successfully learning the target language. All of these characteristics support the usefulness, effectiveness, and practicality of the Mobile-Assisted Language Learning. Thus, this theory is developed and shall be called Mobile-Assisted Language Learning Theory.



**Figure 2. Mobile-Assisted Language Learning Theory**

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