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# Experiential Learning in Mobile Technologies

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***Abstract---*** *Experiential learning is the way toward making creating knowledge through the change of experience and understanding and it has been received in an expanding number of areas. This paper explores the technological support probability for experiential learning. A learning movement flow and a "mobile technology system" were intended to encourage the students in the experiential learning. An analysis was led on 2 classes of fifth-grade at a primary school, one class utilizing "personal digital assistants (PDAs)" and another working without them. The outcomes demonstrate that mobile technologies are compelling in improving creation of knowledge during experiential learning. The interchange between the proposed learning flow and affordances of mobile technology for experiential learning is altogether examined.*

***Index Terms---*** *Mobile technology, Affordance, Mobile learning, Experiential learning.*

## I. INTRODUCTION

A theory "learning by doing" underscores the estimation of activity during learning. From a point of view of an experiential learning, learning is a procedure wherein knowledge is created by the experience transformative. Ideal learning happens when individuals can interface past experience in new ideas it needs to learn. Experiential learning uses learning action in which learners experience substantial learning settings instead of abstracted knowledge. Until this point in time, experiential learning has been implemented in various fields[1]. In any case, the experiential learning's utility has been addressed by certain educators. In a context of credible learning, can students be roused to adapt successfully with no cautious guidance or direction? Experiential learning is by and large viewed as to focus student mindfulness or awareness by lacking a mechanism in the context of learning. In this way, the goal is to endeavour to give technological support to encourage experiential learning[2]. With fast technology advancement, it has been an expansion in the amount of investigation into applying mobile technologies to learning. The project of G1:1 ("Research Centre for Science and Technology for Learning") and the project of M-learning are instances of that. Researchers have contended that numerous new energizing opportunities for learning have created by mobile technologies. As for help of experiential learning in mobile technologies, this was a topic of the project of mobile learning. Most of the research in the mobile technologies field claim advantages for learning dependent on proof of learning accomplishment. Nonetheless, the collaborations that exist among these technologies and learning are perplexing and differed. Learning happens as a system of socio-culture, inside which numerous learners cooperate to make an aggregate movement encircled by historical practice and cultural limitations[3]. In the study, "personal digital assistants (PDAs)" together with chaperon inserted functionality are joined into an outside learning flow action so as to look at in what manners and to what degree experiential learning of students



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of primary school can be encouraged. In the accompanying segment, it presents how it see mobile technologies as a chance to improve experiential learning. The idea of affordances will acquainted with assess the adequacy of experiential learning in mobile technology.

## II. AFFORDABILITY IN EDUCATIONAL OF MOBILE TECHNOLOGIES

Mobile technologies are rapidly getting crucial. As far as educational application, "mobile technologies" can be seen as assistance that electronically conveys educational and general substance to learners paying little mind to area and time. It can likewise bolster learners in consistent learning and credible[4]. Mobile technologies give moment learning direction and input and utilize new interfaces for approaches to diverse learning. Specifically, a few investigations called attention to that mobile technologies are useful in outdoor and field-trip-based learning. Mobile devices, mostly handheld computers, become an inexorably convincing decision of technology for classes. Thusly, in this investigation, it thinks about PDAs like an exploratory instrument. Mobile technologies give moment recording functionality to note-taking outfitted with module cameras and functions of sound recording. By using computing power and remote ability, these mobile technologies could make learning practical, prompt, credible, accessible, efficient and advantageous[5]. With these mobility devices, regularly palm-available, learning can be accomplished similarly likewise with its antecedents – calculator, pencil and paper. The term affordance, initially proposed by "James Gibson", alludes to the connection between the physical properties of an object and the user's characteristics that empowers specific communications among object and user. From the definition of "Gibson", anything which is in affordance is a specific blend of the substance's properties and its surfaces concerning a creature. Educational affordances are those attributes of an ancient rarity that decide whether and how a specific learning behaviour might happen inside a given setting. Educational affordances can be defined as the connections between an educational intercession's properties and the learner's characteristics that empower specific sorts of learning. Mobile technologies give differently inside arm reach and quick interfaces of the note taking for symbolism also, verbal methodologies. Be that as it may, the inquiry is whether learners will have the option to perceive and execute these abilities and understand these upgraded learning possibilities in an outdoor class in the context of an experiential learning[6]. This examination means to explore how mobile technologies' properties are seen by learners and how they influence the execution of learning flow. This examination has three objectives. Initially, to build up a system joining mobile technologies to help experiential learning. Second, learning flow designed for the experiential learning in a garden of school in which the students are guided with PDA's facilities. Third, to lead analysis for comparing the creation of knowledge of two gatherings of students of fifth grade, one furnished with PDAs and other without PDAs. The advantages and entanglements of experiential learning in mobile technologies are examined also[7].

## III. DESIGN AND EXPERIENTIAL LEARNING ACTIVITY AND IMPLEMENTATION OF SYSTEM

### III.I. Flow of Learning*:*

In this examination, it builds up a mobile technology implanted learning flow to help field-trip learning dependent on



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the experiential learning systems in the accompanying stages.

#### III.I.I. Sensory Experience

During the subsequent stage, students acquired sensory experience such as PDA prompts drove them to feel plants utilizing different senses, for example, smell, taste, sight, hearing and contact. After the tangible experience, students were needed to record its impacts on its PDAs[8].

#### III.I.II. Photo Taking

To catch the highlights of plants solidly and efficiently or effectively, and to gather data for its maintenance, students were given module cameras of PDAs for taking photos. The cameras can rapidly record the visual information and suspect that information to catch credible and complicate phenomena. These photos may help students in reviewing information which gained in learning environment[9].

#### III.I.III. Further Observation

In the further perception organize, prompts from PDAs guided students to watch more profoundly than in the past stage, and again educated students to record these perceptions. On the off chance that students required background information, it can get to internet learning material through its PDAs.

#### III.I.IV. Final Report

After field perceptions, students came back to its class and composed passages, its final reports – recording what it found out about the perception target. These sections were to be set on plant data plaques formed separately, one by every student. During the process, students had the option to allude to its photos, recorded vocal inquiries and perception notes. The objectives of the stage were to assist students with sorting out the information framed in the entire field-trip learning action and to urge them to conceptualize. As significant objective of this investigation is creation of knowledge through experiential learning, this centres on last two phases, in particular question proposing and final report. Urges on the inquiry proposing stage which lead students to consider and inquiries and propose conflicts during perception. In final report arrange, students participate in integrating knowledge created from past learning stages[10].

### III.II. System Implementation for Experiential Learning:

The objective of the proposed framework is to help experiential learning for students and teachers. For the teachers, the system gives authoring and observing interfaces. Through the interface of authoring, teachers can configuration prompts and the materials of learning. That is, the teachers can structure its own quizzes or prompts, such as information about dinosaurs or the aquatic plants as indicated by the guidance prerequisites. It can likewise create materials of learning to help individual learning of students and to help students in handling issues when reacting to test questions. The observing interface gives a comprehensive image of students learning status in classroom, whereby teachers can comprehend progress and learning results of student. Teachers can likewise promptly facilitate specific students who experience difficulties in learning. For the students, system shows prompts to control them. First, students pursue the brief to the correct area or learning objective, for example, a specific plant. It at that point look for answers with the PDAs and react to the tests on its PDAs. During the processes of learning, students examine knowledge by means of an authentic field outing and submersion in the environment. Moreover, students can explore and consider the progress of learning of



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different students through the sharing of real time information on PDAs. The framework is run in an online environment and is executed by "MySQL" and "PHP" on a Linux OS. The system comprises of 1 database and the 4 modules. The database stores prompts, learning portfolios, quizzes and personal information of students[11].

## IV. METHODOLOGY

The experimental study was led to legitimize the theory that mobile technologies can expand the degree of creation of knowledge through experiential learning past that which is accomplished with the traditional methods (such as paper and pencil). The experiment comprised of a few segments: pre-test, questionnaire, main activity and post-test. Students were at first given a pre-test. The students "with PDA" were given an extra course of 90-min on the utilization of PDAs. This course was not provided to the group "with PDA". In the primary guidance section of 90-min, students were educated about the "African Touch-me-not" in the garden of school. In the first place, the teacher briefly presented the environment of learning, learning flow for students and content of learning. It took approximately 5 min. Students at that point pursued a learning flow to examine the "African Touch-me-not" under the direction of prompts – on its PDAs with PDA students, and on paper without PDA students. In arrange 1, photograph taking, with PDAs students utilized the digital cameras for taking photos, whereas different students drew pictures with the help of paper and pencil. During other stages such as 1.1, 1.2, there are two classes of the students who took notes and alluded to material of learning on PDAs or paper contingent upon the condition it was in. The material of learning was co-planned by the first creator and science educator dependent on the educational program standard gave by the "Ministry of Education in Taiwan"[12]. During the inquiry proposing, organize 1.3, spoken inquiries were recorded by the students with PDAs utilizing its PDAs while inquiries wrote down on paper through without PDAs students. During the final stage, in the final report, "with PDAs" students made information plaques by alluding to the photos, verbally expressed inquiries and the perception notes it had recorded on its PDAs, whereas observation notes, sketches and written inquiries were referred by the students and had recorded on paper by the students "without PDAs". Students took a "post-test" and then filled in inquiries poll in the study hall after outdoor activity. The "pre-test" and the "post-test" were indistinguishable and comprised of seven different decision inquiries regarding "African Touch-me-not". The final reports were dissected as pursues. Regarding each sentence like a unit for investigation, the descriptions of each student in final report were arranged in to two classes: statements that were enlivened by prompts and statements made during the observation of field-trip. The previous had been referenced previously, in the materials of learning or in prompts gave, either in paper handouts or by its PDAs. The last managed ideas that had not recently been referenced. The descriptions ascribed to the learning of field-trip would thus be able to be identified as in one of the classes. The investigation expected that "with PDA" students, through the help of "mobile technologies", would gain more knowledge than "without PDA" students. In this manner, one-followed t-tests were directed in this investigation.



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**Table. 1** Statistics of T-Test Related to the Impacts of Learning Achievement

| | With PDA | | Without PDA | | t-value |
|---|---|---|---|---|---|
| | M | SD | M | SD | |
| Pre-test | 3.07 | 1.02 | 3.18 | 1.72 | |
| Post-test | 6.69 | 0.97 | 6.07 | 1.62 | |
| Post-test- Pre-test | 3.61 | 1.05 | 2.89 | 1.90 | 1.95* |
| N | 35 | | 33 | | |

*p<0.06, M=Mean, SD=Standard Deviation.

## V. RESULT

This examination analysed the impacts of "mobile technology" support on gaining of knowledge by contrasting the two distinct classes. No significant contrast existed between two gatherings scores of "pre-test" (average score 3.07, 3.18; t =-0.38, P > 0.06). The impacts of learning accomplishment are appeared in Table 1. The resultant learning accomplishment scores of the gathering "with PDA" were significantly much more than "without PDA" group. It can accordingly presume that "with PDA" group held more knowledge than "without PDA" group. As an activity of experiential learning, gaining of knowledge was only one of the goals. To investigate how the students, develop knowledge in experiential learning, it further examined the final reports of two categories. Every statement was treated in final reports as "a unit of analysis" and categorized in one of the two classifications: "knowledge created" and "knowledge acquired". The outcomes (in Table 2) demonstrated that, regarding the quantity of descriptions previously referenced in related materials and no distinctions existed between the two categories. Be that as it may, as far as the quantity of descriptions newly produced during the process of experiential learning, "with PDA" students created more knowledge than "without PDA" students.

**Table. 2** Final report of t-test

| Variables | With PDA | | Without PDA | | t-value |
|---|---|---|---|---|---|
| | M | SD | M | SD | |
| Knowledge acquired | 4.28 | 1.88 | 4.24 | 1.91 | 0.08 |
| Knowledge created | 2.75 | 2.45 | 1.80 | 1.81 | 1.75* |
| N | 35 | | 33 | | |

*p<0.06, M=Mean, SD=Standard Deviation.



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## VI. CONCLUSION

Result of the investigation uncovered that the students who are utilizing mobile technology to help its learning exhibited an expanded degree of latest creation of knowledge, an improved learning awareness in context and advanced knowledge conceptualization through the experience. At last, an appropriately designed system of mobile technology, together with the joining of instructive contemplations into the plan of learning flow, illustrated affordances in technology through its interaction.

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