GRAB A TUTOR: A DECISION SUPPORT MOBILE APP FOR STUDENT TUTORING

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Abstract. This study aimed to develop a mobile app that would cater the needs of parents or guardians in finding reliable tutor for their child's in need of tutoring services. The study focused on developing a mobile app entitled "Grab a Tutor: A Decision Support Mobile App for Student Tutoring." All features stated on the user story board, use case diagrams and data flow diagrams were provided on the developed mobile app. The Grab a Tutor: A Decision Support Mobile App which was developed from August 1, 2018 up to December 2018 conforms to ISO/IEC 25010 Product Quality Standards and ISO/IEC 25010 Quality in Use Standards. The study was conducted using a developmental type of research. Data were gathered through informal and formal interviews, observations, internet searches, and survey questionnaires. The mobile app was developed using the phases of the Agile Approach Development which includes requirements analysis phase, planning phase, design phase, develop phase, release phase and track and monitor phase. Source code and design were constructed using Ionic framework and XAMPP. The implementation of the various technology used in the mobile app made it easier to meet all the aims that the researcher conceptualized. In order to assess the consistency and reliability of the mobile app, the researcher also used ISO/IEC 25010 as the standard testing tools. As a research standard, it was successful because it meant that the framework produced met the respondents' level of standards. Since it has been standardized, ISO / IEC 25010 describe a well-known consistency attribute and serves as the basis for many approaches to quality control. An error-free application and software reliability would be ensured.

Keywords: DECISION SUPPORT, Grab A Tutor, Mobile App

1. Introduction

Attitude affects the life of any individual, including their education. The academic attitudes of students determine their potential and ability to learn. Pessimistic students are unable to continue education unless their attitude toward learning and their behaviour improve. Changing the attitudes of students towards learning is a process involving identification of reasons that influence such attitude and using this as a basis to bring about improvement. The challenge is to use this knowledge to shape a healthy outlook as educators discover student attitudes about learning.

The potential benefits of schooling can be viewed by adult learners as better career and more income opportunities. However, pre-school and elementary school learners as well as junior high school students think differently as they are still young to see the broad picture. To them, the desire for momentum and reward is more urgent and the most that can be expected of them at their age is at least to be able to read and write and to partake in the learning process in order to eventually achieve learning satisfaction. But this requires proper guidance and tutoring from parents or their substitutes.

However, parents and guardians, most of the times, tend to find it difficult to perform their obligation as guardians and tutors because they too must make a living for the family. Many parents, therefore, resort to child's tutoring services to provide their children with assistance in coping with their lessons in the classrooms. The problem, however, is that it is oftentimes difficult to find a tutor whom they could trust their children for educational support.

Tutors use their skills and experiences to educate students outside the classroom. The most popular role that tutors can perform is to provide students or classes with private instruction, to create alternative methods for challenging students, and to use a range of strategies, including modelling, listening, interviewing, and improving.

The biggest dilemma here is how parents may be assured if the tutors they recruit will help their child to develop their skills and improve their academic results.

The researcher therefore conducted this thesis entitled "Grab a Tutor: A Decision Support Mobile App for Student Tutoring. This mobile app can facilitate finding a trustworthy tutor for any learning areas and for any school age or level

from pre-school to junior high school, without leaving one's home and just by clicking on the computer or any smart gadget.

Only the tutorial centers and the mobile app administrator can access and add a tutor to the existing pool of tutors. Tutorial centers took part in the completion of this project by providing the name of tutors that they hired based on their credentials. In return, these centers get a chance to promote their services to the public as the profile and performance records of their tutors were featured in the mobile app for prospective clients to view. They also get a chance to self-asses the quality of the tutorial services they provide based on the qualification of their tutors and based on the frequency of requests for the services of the tutors in their lists.

The mobile app administrator could screen the credentials of teachers applying as tutors, particularly if they were from the public school. These teachers' performance rating in the public school shall provide the admin with a basis in making decision whether to hire the teachers as tutor in their center. When hired, tutors from the public schools will be added to the pool of tutors by the mobile app administrator.

Another unique feature added to the Grab-a-tutor mobile app is the access given to parents/guardians to verify if the tutorial centers are registered on the Department of Trade and Industry (DTI).

2. Methodology

The developmental research design was used in the study. According to Richey & Klein (2005), this design relates to the systematic study of designing, developing, and evaluating instructional programs, processes, and products that must meet the criteria of internal consistency and effectiveness.

This design was used because the study is developmental in nature as it adopted the Agile development phases, namely: requirements and analysis, planning, design, develop, release, and track and monitor. These phases focus on adjusting to the evolving nature of priorities instead of anticipating what those priorities will be in the future. This was achieved by introducing an iterative approach in which objectives were re-evaluated as required to progress the project. Agile methodology generally depends on progressive undertakings to specify software, production, and distribution (3 Agile Software Development, 2008).

2.1. Sampling Procedure

Purposive sampling technique was used in determining the sample size of the respondents from a population of more than 100 experts and more than 2000 parents employing tutorial services for their children.

Purposive sampling is a sampling technique in which the researcher depends on his or her own discretion when selecting sample. This sampling technique was used in this study to ensure that only people with experience and who can benefit from the creation of the mobile app will test its usefulness and efficacy in order to gain their recommendations and reviews on the mobile app's improvements.

2.2. Respondents

In evaluating the mobile app, two groups of respondents have participated. The first set was made up of IT Experts who are graduates of Master of Science in Information Technology was in-charge on assessing the product quality standard of the mobile app. The other group was composed of tutors who have experienced in providing tutorial services and parents who have experienced hiring tutors for their child.

2.2.1 Research Site

This research was conducted in Cabanatuan City because the city abounds with parents who are seeking tutorial services for their children. Furthermore, tutorial centers also proliferate in the city; parents will tend to have difficulty identifying which of these centers can really be relied on. With the help of the Grab-a-tutor Mobile app, looking for reliable and trustworthy tutoring services will be easier for parents; while promoting their services will be easier for the tutorial centers. Likewise, Grab a tutor may promote healthy completion among tutorial service providers in the city.

Table 1 Criteria for Identifying the Samples

Samples	Criteria	Number of Samples
IT Experts	At least a graduate of Master of Science in Information Technology (MSIT)	10
Parents/Guardians	Have tried to hire tutors for the academic needs of their child	20

Tutors/Teachers	Teachers from Good Samaritan Colleges, Todds and Tots, Spedcare Therapy Center, and Camp Tinio National High School	20

Ten (10) IT Experts, twenty (20) parents and twenty (20) teachers were the samples used in this research based on the criteria plotted by the researcher as basis of who should be the IT expert, the parent and the teacher respondents.

Educational qualification was a criterion used in choosing the IT experts who were all graduates of Master of Science in Information Technology (MSIT) to ensure that they have enough knowledge in assessing a developed mobile app or systems.

Table 2 Distribution of Samples

Samples	Schools	Number of Samples
IT Experts	Nueva Ecija University of Science and Technology	10
Parents/Guardians	Good Samaritan Colleges	10
	Camp Tinio National High School	10
Tutors/Teachers	Todds and Tots	3
	Spedcare Therapy Center	1
	Good Samaritan Colleges	8
	Camp Tinio National High School	8

Three teacher respondents were from four (4) tutorial centers in the city while 16 of them were from a National High School who agreed to collaborate with the researcher in the completion of the mobile app's needed data. These teachers also experienced providing tutorial for extra income during weekends.

The parent respondents have children enrolled in a National High School and in three private schools in the city. All these parents pay for their children's tutorial services.

All the above-mentioned IT experts, parents/guardians, and tutors/teachers represented the population in evaluating the Grab-a-tutor Mobile app based on the ISO/IEC standards.

3. Results and Discussion

3.1. System Performance Benchmark

The Grab a Tutor: A Decision Support Mobile App for Student Tutoring was developed based on the phases of the Agile Approach Development which includes requirements analysis phase, planning phase, design phase, develop phase, release phase and track and monitor phase. Source code and design were constructed using Ionic framework and XAMPP.

The mobile app was evaluated by two sets of respondents.

On the assessment done by 10 IT Professional; the mobile app was Very Functional with an average weighted mean equals to 3.87, Very Efficient with an average weighted mean equals to 3.37, Very Compatible with an average weighted mean equals to 3.55, Very Usable with an average weighted mean equals to 3.68, Very Reliable with an average weighted mean equals to 3.55, Very Secure with an average weighted mean of 3.66, Very Maintainable with an average weighted mean of 3.66, and Very Portable with an average weighted mean of 3.77.

On the assessment done by 20 Parents and 20 Teachers, the mobile app was Very Acceptable in terms of Effectiveness with an average weighted mean equals to 3.35, Acceptable in terms of Efficiency, with an average weighted mean equals to 3.03, Acceptable in terms of Satisfaction with an average weighted mean equals to 3.15, Acceptable in terms of Freedom from Risk with an average weighted mean equals to 3.05, Acceptable in terms of Context Coverage with an average weighted mean equals to 2.95.

Conclusions

In order to promote students' education needs, this study began with the concept of developing a mobile app that helps guardians to find and communicate with trustworthy tutors in all learning fields, from pre-school to junior high school here in Cabanatuan City. It has been proven to be a powerful mobile app for guardians/students to recruit reliable tutors associated with reliable DTI approved schools/tutorial.

The implementation of the various technologies used in the mobile app made it easier to meet all the aims that the researcher conceptualized. In order to assess the consistency and reliability of the mobile app, the researcher also used ISO/IEC 25010 as the standard testing tools. As a research standard, it was

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References

agile-scrum-extreme-testing. (n.d.). Retrieved from Guru99: https://www.guru99.com/agile-scrum-extreme-testing.html

apache-web-server. (n.d.). Retrieved from techopedia: https://www.techopedia.com/definition/4851/apache-web-server

Carolyne Jacobs, Michael Wilson, Charles Barker. (2015). Using the latest developments in mobile technology to improve students' engagement with assessment feedback. *International Conference on Interactive Mobile Communication Technologies and Learning (IMCL)*, 124-126.

Crossman, A. (2020, March 19). *purposive-sampling-3026727*. Retrieved from ThoughtCo.: https://www.thoughtco.com/purposive-sampling-3026727

details?id=com.grabtaxi.passenger&hl=en. (n.d.). Retrieved from Google Play: https://play.google.com/store/apps/details?id=com.grabtaxi.passenger&hl=en

docs. (n.d.). Retrieved from Docs: https://ionicframework.com/docs

enterprise. (n.d.). Retrieved from MySQL: https://www.mysql.com/products/enterprise/

evolution-mobile-apps. (n.d.). Retrieved from acodez: https://acodez.in/evolution-mobile-apps/

Fredys Simanca, Rubén González, Luis Rodriguez, Daniel Burgos. (2020). Personalized tutoring model through the application of Learning Analytics phases. *IEEE Latin America Transactions, vol. 18, no. 01*, 7-15.

how-it-works. (n.d.). Retrieved from Uber: https://www.uber.com/us/en/ride/how-it-works/

Hsien-Hui Tang, Cyun-Meng Jheng, Miao-En Chien, Ni-Miao Lin, Mike Y. Chen. (2013). iCAN: A tablet-based pedagogical system for improving the user experience of children with autism in the learning process. *IEEE International Conference on Orange Technologies (ICOT)*, 177-180.

index. (n.d.). Retrieved from Apache Friends: https://www.apachefriends.org/index.html

introduction. (n.d.). Retrieved from Laravel: https://laravel.com/docs/4.2/introduction

intro-whatis. (n.d.). Retrieved from php: https://www.php.net/manual/en/intro-whatis.php

Jianjun Hou, Kuiyuan Zhang, Xuexiang Yang, Hongpeng Gao. (2014). M-learning Course Development and Practice Based on Tutor-Directed Online Teaching. *International Conference of Educational Innovation through Technology (EITT)*, 21-28.

Kai-Hsiang Yang, Shan-Shan Wu, Wen-Yu Lo, Wan-Ling Chang. (2015). Investigating the Effects of Mobile Learning with Cross-Age Peer Tutoring in English Learning. *2015 IIAI 4th International Congress on Advanced Applied Informatics (IIAI-AAI)*, 227.