

Analysis of Healthy Lifestyle Game Design: “Run Dash!”

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Abstract. Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, beliefs, and habits. Educational methods include storytelling, teaching, and training. Healthy Lifestyle Game is an educational game that developed as a mobile application game. This game will give a better understanding on how the selection of foods in our daily basis will affect our health from time-to-time. The objectives of the project are to analyze the design of Healthy Lifestyle Game: Run Dash. This mobile game is focusing on young adult eating lifestyle that are mostly universities' student that most likely to choose unhealthy foods that contain high calories over healthy foods. This mobile game is created by using multimedia elements such as text, sound, and animation for user to feel enjoy while playing it. The method that been used to develop this mobile application game is by using ADDIE model that consist of five main stage which are analysis, design, development, implementation, and evaluation. This mobile game been developed because there is no game on android platform that focused on healthy lifestyle that have three main pillar of game which is have great usability, great functionality, and lastly have great design. The contribution of this mobile game is to give impacts towards the targeted user's decisions when they buy their foods because it is proven that game can affect the way people think easily when the event happens repetitively that automatically train our brain. It is hope that this mobile application will give benefits to all users.

Keywords: Healthy lifestyle, game, education.

INTRODUCTION

Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, beliefs, and habits. Educational methods include storytelling, teaching, and training. Education frequently takes place under the guidance of educators, but learners may also educate themselves (Ze-Nian et al, 2021).

Multimedia can make the application easier to use compared to non-multimedia application. Besides, with the multimedia interface, the application or system can be easier to operate. With the proper multimedia elements, it can provide user-friendliness and the user can be spent less time to use the application or system. To succeed an application, the multimedia interface must be intuitive. Intuitive interface means that using proper icons, images, visual and audible responses, and provide clear input for user. With the intuitive

interface, the user can use the application directly without training. Multimedia is powerful in the presentation because it consists of text, sound, graphic, video, and animation. The user can understand the content easily and it is more enjoyable to play the game (Ze-Nian et al, 2021).

PHYSIOLOGICAL FUNCTION OF FOOD

The health of a person depends on the type and quantity of food stuff consumed. Good nutrition is essential for a person to grow and develop normally and to remain healthy throughout life. When a person does not eat proper food, there are chances of the body not developing normally. There are chances that some organs of the body may start malfunctioning or there may be some disease. Poor nutrition may also influence the mental and social well-being adversely. There are three physiological functions performed by food. These are energy giving, body building, regulating body processes and providing protection against diseases (Sharda Gupta et al, 2016). The explanation of those three physiological functions performed by food is shown in the Table 1 below:

TABLE (1). Physiological functions performed by food

NO.	FUNCTIONS	EXPLANATION
1.	Food Provides Energy	Everybody needs energy to do work. Energy is required for walking, studying, eating, working in the house or outside. You get this energy from the food that you eat. Human need energy even when they are resting. The reason for this is, there are Different organs inside our body that are always working, for example, heart is pumping blood, stomach is digesting food, lungs are breathing in air, etc. All these organs need energy for their respective functions and food provides that energy (Sharda Gupta et al, 2016).
2.	Food Helps in Body Building	Our body is already made up of thousands of small cells. New cells are added to these to help the body to grow. Food is needed for the formation of new cells. Cells also die or are damaged due to injury. New cells need to be formed and this repair work is done with the help of food. So, foods are so crucial for this type of development (Sharda Gupta et al, 2016).
3.	Foods Regulates Body Processes	Regulatory functions refer to the role of food in controlling body processes, for example, our body temperature is maintained at 37 degrees Celsius. Similarly, the heart beats are also maintained at 72 beats per minute. Excretion of waste products from the body is also regular. If not, the body suffers from a disease called constipation which can lead to further complications. All these processes are regulated by the food that been eat. The food that we eat gives us strength to fight against disease germs. (Sharda Gupta et al, 2016).

ISLAMIC PERSPECTIVES ON HEALTHY EATING LIFESTYLE

In the Quran and Hadith, many people are taught about healthy eating lifestyle and food nutrition. The guide given is not only intended to maintain human physical health but also spiritual health because human growth must be balanced between the spiritual and the physical. As a Muslim, we eat to live and not live to eat, and we need to be concerned about

the food we eat and comply with the requirements of religion and in terms of nutrition. Furthermore, according to verses of Quran and Hadiths, the quantity of food to be consumed should be kept at a moderate level. Muslims also have been advised to avoid excessive eating and drinking and the stomach of Muslim should be filled to one third. That is why Islam is a religion that complete the way of life because it provided numerous guidelines on how we interact with food (Ahmed et al, 2017).

THE PRINCIPLES AND ELEMENTS OF DESIGN



FIGURE 1. The principles and elements of design

The principles of design are common rules used by designers to shape their work. Applied successfully, these principles give designers the power to create both well-functioning and aesthetically pleasing designs. It is a combination of excellent functionality and nice aesthetics leads to better UX for all (Zachery, 2021).

The elements of design are the basic, raw building blocks used by designers to create a piece of work. Lines, shapes, colours, typography, texture, and space are the essential elements of design, and they exist in almost all prototyping tools. The principles of design, however, are the common rules harnessed by designers to give cohesion to their work (Justin, 2020).

The principles of design function in tandem with the elements of design, as they both help designers understand how they should create a well-crafted, user-friendly design. Design principles also help designers evaluate other works, which includes understanding the reasons why a designer made certain decisions in their creative process (Zachery, 2021).

MOBILE APPLICATION

A mobile application, most referred to as an app, is a type of application software designed to run on a mobile device, such as a smartphone or tablet computer. Mobile applications frequently serve to provide users with similar services to those accessed on PCs. Apps are generally small, individual software units with limited function (Techopedia, 2020).

Mobile applications are a move away from the integrated software systems generally found on PCs. Instead, each app provides limited and isolated functionality such as a game, calculator, or mobile web browsing. Although applications may have avoided multitasking because of the limited hardware resources of the early mobile devices, their specificity is now part of their desirability because they allow consumers to hand-pick what their devices are able to do (Techopedia, 2020).

Apps are divided into two broad categories which are native apps and web apps. Native apps are built for a specific mobile operating system, usually iOS or Android. Native apps enjoy better performance and a more finely tuned user interface (UI), and usually need to pass a much stricter development and quality assurance process before they are released (Techopedia, 2020).

TABLE (2). Types of apps available

NO.	TYPES OF APPS	EXPLANATION
1.	Gaming Apps	The equivalent of computer video games, they are among the most popular types of apps. They account for one-third of all app downloads and three-fourths of all consumer spending (Techopedia, 2020).
2.	Productivity Apps	These apps focus on improving business efficiency by easing various tasks such as sending emails, tracking work progress, booking hotels, and much more (Techopedia, 2020).
3.	Lifestyle and Entertainment Apps	This apps are increasingly popular, these encompass many aspects of personal lifestyle and socialization such as dating, communicating on social media, as well as sharing and watching videos. Some of the most widely known apps such as Netflix, Facebook or TikTok fall into this category (Techopedia, 2020).

METHODOLOGY

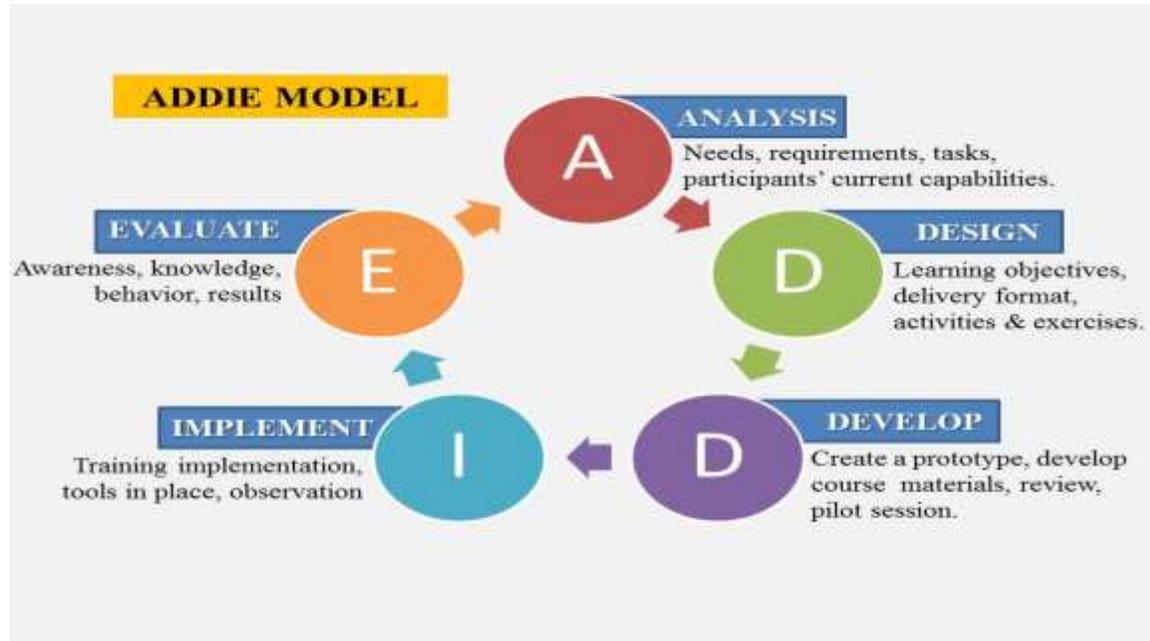


FIGURE 2. ADDIE model

Methodology refers to ways of obtaining, organizing, and analyzing data. Methodology decisions depend on the nature of the research question. Methodology in research can be the theory of correct scientific decisions. Project methodology also a strictly defined combination of logically related practices, methods and processes that determine how best to plan, develop, control, and deliver a project throughout the continuous implementation process until successful completion and termination. It is a scientifically proven, systematic, and disciplined approach to project design, execution, and completion (My Management Guide, 2021).

Run Dash! (Healthy Lifestyle Game)

The title of this mobile application game is Run Dash! (Healthy Lifestyle Game). This game is an adventure of a character that known as Ash that trap in an infinite run challenge that focus on healthy eating lifestyle. For Ash to stay alive, he must choose the right food to give him energy to continue his run. This game will educate the users on how to have a healthy life by eating well-balanced and healthy foods. This game will give a better understanding on how the selection of foods in our daily basis will affect our health from time-to-time.

This game will have one mode only, which is an infinite run mode. This mode required the user to control the character by using gesture-based control that will change the movement of the character. There are three types of gesture control that can be used to play the game. The first gesture control is a swipe up gesture that will make the character jumps. The second gesture control is a swipe down gesture that will make the character slides across the obstacles. The third gesture control is swipe left and right to avoid the obstacles and collect healthy foods. The character will be running through different obstacles and the

user will use these three gestures control to pass through all the obstacles and make sure to stay alive with the food that they choose. The user can understand the content easily and it is more enjoyable to play the game. This app is an interactive app because it implemented all the elements of multimedia, which is text, sound, graphic, video, and animation.

FINDINGS



FIGURE 3. Interface run dash game design

The Figure 3: Run Dash! Game Design above show that the game that already been developed followed the principle and the elements of design. The principles of design that been applied are unity, balance, repetition, and contrast. Then, the elements of design that been applied are lines, shapes, colors, typography, texture, and space. With the application of principles and elements of design, the game that been created became user friendly and more enjoyable to play by the targeted users.



FIGURE 4. Game play design

The Figure 4: Game play design above shows the interface of game world. There are 12 scene of game worlds. All the obstacles are placed accordingly in the game world. The healthy foods and fast foods were placed randomly on the game track. Lastly, the power-ups were placed to give shield and lighting speed power to the game character during the game play.

CONCLUSION

In this mobile game, there are a lot of fun and interactive features that been used to make it enjoyable to play. A lot of colors have been used in this project to make it colorful and interesting which helps to attract the young users which are the targeted audiences. This mobile game application manages to introduce the effects of consuming unhealthy foods which are fast foods among youngsters.

This mobile game application also gives impacts towards the targeted user's decisions when they are buying their foods because it is proven by some studies that video game can affects our real-world decision making based on the game that been played.

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