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Development of a Digital Well Being Application

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Dedication

After God has blessed us with the completion of this memorandum, we dedicate the fruit of our efforts to our parents for the material and moral support they gave us.

Abstract

Our children are very impressed with technology and love it because it provides them with a kind of happiness and recreation under the framework of electronic games and Internet sites, as well as social networking sites that young people rush towards, but what happiness? It is the false happiness that carries behind it a lot of malice for those who do not realize the main significance of these applications, websites or games, and in the absence of parental control over children's phones, tablets, or in general their electronic devices, and given that children are sure with certainty that no one will share them during their use. For these devices, they accept sites and games with a level of immorality, as they do not realize the consequences of this demand. On the other hand, children link their happiness in our current era to electronic devices, and as we see that some parents when they get annoyed with their children, they preoccupy them by playing in these devices. What brings happiness to children, they will race to it every now and then, and it is what we express as electronic addiction, which forced us to find a solution to this disease.

Key words: Electronic devices - Parental control - Electronic addiction

الملخص

أعجب أطفالنا كثيرا بالتكنولوجيا و أحبوا لأنها توفر لهم نوعا من السعادة و الترويح عن النفس تحت إطار الألعاب الإلكترونية و مواقع الأنترنت، كذلك مواقع التواصل الاجتماعي التي يتهاافت نحوها الشباب، و لكن أي سعادة؟ إنها السعادة الزائفة التي تحمل وراءها الكثير من الخبث لمن لا يدرك المغزى الرئيسي لهذه التطبيقات أو المواقع أو الألعاب، و في ظل غياب الرقابة الأبوية لهواتف الأبناء أو أجهزتهم اللوحية أو بصفة عامة أجهزتهم الإلكترونية و نظرا لأن الأبناء متأكدين حد اليقين بأن أحدا لن يشاركهم خلال استعمالهم لهذه الأجهزة فإنهم يقبلون على مواقع و ألعاب ذات مستوى من اللا أخلاق حيث لا يدركون عواقب هذا الإقبال، من جهة أخرى يربط الأطفال سعادتهم في عصرنا الحالي بالأجهزة الإلكترونية و كما نرى أن بعض الآباء حين ينزعجون من أبنائهم فإنهم يشغلونهم باللعب في هذه الأجهزة حتما و إن ما يجلب السعادة للأطفال سيتسابقون إليه في كل وقت و حين، و هو الذي نعبر عنه ب الإدمان الإلكتروني و الذي فرض علينا إيجاد حل لهذا المرض.

الكلمات المفتاحية: الأجهزة الإلكترونية – الرقابة الأبوية – الإدمان الإلكتروني

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General Introduction

Introduction

After the tremendous development in the field of electronics, and as we have noticed, and everyone notices, most of the phone owners live in isolation from those around them because they are busy with their phones for long hours, and this is in various countries of the world, Arabs and non-Arabs, east and west, north and south, inevitably, and if this matter worsens It will lead to electronic addiction, which in turn is dangerous for the individual and society.

In Algeria, this type of addiction is trying to penetrate society and settle in it, similar to other countries such as America, Canada, Russia and other developed countries, and some studies in these countries have indicated that the matter has worsened and that there are very serious cases due to This type of addiction, and there are many cases in the world that have committed suicide due to electronic addiction, where the Internet and social media are among the things that are most capable of igniting addiction that can lead a person to suicide, and among these famous cases, according to a chat user GPT:

1. Elena Mizulina: A 24-year-old Russian girl committed suicide due to addiction to smartphone and Instagram application.

2. Daniel Lee: an 18-year-old British guy, one of the people who killed themselves after the challenge called "Blue Wall Challenge" on the Internet. 3. Jacqueline Rivera: A 17-year-old American girl, who committed suicide due to addiction to social applications, including continuous update tools.

4. Kildon Kay: A 15-year-old Canadian girl, who committed suicide after being consumed by the online social systems.

Especially since in Algeria there are also cases that suffer silently from this disease and must be treated, even cases that are on the path of doom It must be stopped to the extent that it is not allowed to be harmed.

If this kind of addiction was not limited to destroying the human personality psychologically and destroying it physically, but rather developed into what is worse and more important, and that the matter reaches murder and suicide, then this is not acceptable at all. Considering Algeria as one of the developing or developing countries that seeks to keep pace with technology, this means its progress and its closeness to modern technology, and by entering Algeria into the world of modern technology, this matter can cause a boom and a rise in cases of addiction of this kind, especially With young people who are paving the way for a future image of their homeland, and because they are the ones who inculcate values and principles in them so that we do not produce a generation of idiots, and this is the most dangerous affliction, religiously and worldly. This is what prompted us to delve into this research.

What increases the risk is that the role of the family (parents) has become only concerned with the basic needs of children (eating, drinking, and clothing), at the expense of providing advice, guidance, and guidance, in addition to providing them with mobile devices, and placing them in their bedrooms, and with weak follow-up, and then the effect of The digital age is on children, which places a burden on parents and warns them of danger, as it requires parents to acquire some skills and experiences about parental education to deal with children and guide them in the right way.[1] And this is what prompted us to delve into this research.

Problematic

The twentieth century witnessed a comprehensive renaissance in the information technology and digital media sector, which enhanced the flexibility and ease of communication between different groups and institutions, which placed a burden on parents of the need to provide them with experiences, knowledge, and skills that enable them to perform their parental duties and help them to carry out those duties in the best way.[2]

Based on this, and given that many children and even adults fall into electronic addiction, the problem raised is: What is the way to deal with electronic addiction in light of strengthening parental control by applying the principle of digital health?

1. State of the Art

1.1. Digital Wellbeing

Technological development is one of the modern and important phenomena in the current society, as it affects all aspects of human life. Technological development is the driving force for the huge changes in the current century, and among the areas that have witnessed rapid progress in technology, we find communications, information technology, computing, design and production, in addition to transportation, energy, medicine, weapons, security, space, environment and energies. renewables, and many more.

Among the most prominent developments in technological development, we find artificial intelligence, which may be considered the backbone of electronic devices that keep pace with our current era, machine learning, cloud computing, biological intelligence, genetic medicine, and perhaps space rotation, in addition to augmented reality and virtual reality technologies. And expectations of the emergence of tremendous developments in the field of cybersecurity and encryption, as well as the huge analysis of big data.

Moreover, the technological development is likely to witness huge shifts in the productive sectors, as important developments may appear in the field of 3D printing and cloud computing, with the transfer of large manufacturing technology to robotics and the manufacturing sector.

There is no doubt that the development in electronics helps in increasing productivity and innovation, saving time and facilitating daily life, and it is expected that technological or electronic development will continue in the coming decades, and all fields will witness huge and important changes, and this is especially with the emergence of emerging institutions And university incubators that invite students to innovate and mark their projects with patents, and here the efforts of students of different disciplines are intensified to come out to the world with what is new or innovative and effective in a way that suits the needs of society.

Among the electronics and technological means, we find the mobile phone, and we have singled it out for mentioning its frequent use by many people in all countries of the world, old and young alike, and what prompted them to use it is social networking applications and the Internet, which in turn connect devices and people and Tools, and contribute to the process of learning and distance education, as well as contribute to providing sources of entertainment and entertainment that most people seek, but it is impossible for the latter to be a one-edged sword, but unfortunately it is a double-edged sword, and as we mentioned its advantages, Among its negative aspects is addiction to its use and the impact of this addiction on psychological and social health. We also note that one of the most dangerous negative aspects of the Internet is exposure of children to harmful and pornographic content, which is the point that drew our attention towards it.

The Internet has given children the opportunity to open up to the world without restrictions, and unfortunately some families misused it, which allowed access to inappropriate sites such as (violence sites, pornographic sites) and other sites. Communication sites are a double-edged sword that can direct

individuals To improve their behavior and thinking, and to educate them about their affairs and the affairs of their society, or lead them to be affected by deviant and improper forms of awareness. It affects their attitudes and thinking, and in our contemporary society, which was affected by the technological revolution, we noticed the presence of negative phenomena, including the presence of the phenomenon of frequent use of smart phones and the Internet by children, which affected children's behavior significantly and had negative repercussions on the psychological, social, health and educational aspects.[3]

Likewise, it is no secret to our thinking about the real dangers of social media, as they are not just static and lifeless tools, but rather they transmit a kind of distorted life, including the values, concepts and behaviors that children adopt with great attraction towards them due to the factors of encouragement and suspense in which they are presented. There are many things, and from here we realized the importance and danger of these methods, whether they are on the individual or society, as we can be afflicted with a generation that is easy to obey and depend on them.[4]

Among the studies that dealt with the negative impact of the means of modern communication technology on the upbringing of young people from the point of view of parents of students is the study (Al-Azamat, 2018, 1867), which confirmed the existence of a negative impact of the means of communication technology on the upbringing of young people to a high degree, and it recommended the necessity Parents regulate children's use of modern communication technology, monitor the materials they watch, and use protection means to ban inappropriate materials. The study (Ali, 2010) aimed to identify positive and negative changes in the Egyptian family as a result of the effects of information technology, especially the Internet. The study used the descriptive approach, and concluded that the Internet has negative effects in various aspects on the family, including social isolation, the disintegration of family and social relations, and the spread of some deviant ideas and behavioral patterns that threaten the social structure, and UNICEF indicated in a report Its title, “The State of the World’s Children 2020: Children in a Digital World,” points to the high number of Internet users among children, and the need to strengthen efforts to protect their data and identities on the Internet. The report indicated that 40% of Internet users in Malaysia are from Children and youth under the age of (24) years, and the largest national survey on safety and security on cyberspace for schoolchildren in Malaysia reveals that more than (70%) report being subjected to harassment on the Internet, while (26%) have been subjected to cyberbullying (UNICEF, 2017) What also increases the danger is that there are still no Arab laws or legislation to protect children on the Internet, despite the efforts and conferences that have been held recently on this issue (Mahmoud, 2019, 103).

What confirms the importance of parenting is that the most frequently used activities are searching for information about parenting education websites on the Internet, skills in using technology, collecting information on how to deal with smart phones and e-mail (Dworkin, 2013), social networks, and using a webcam. And the video, and this indicates the danger and impact of digital technology on children and the keenness of parents in America to acquire knowledge and skills that will benefit them in raising their children, as parents lack awareness of the dangers of the Internet and its negative impact on children.[5]

The science of technology in development turned the world towards major challenges and prompted the adoption of laws and policies that contribute to limiting the potential negative effects of technology on humanity and the environment, and supporting technological development at the same time to contribute to managing the huge changes and important challenges facing humanity in this regard dynamic world.

1.2. Applications for Digital Wellbeing

1.2.1. Definition

Parental control applications are modern information and communication technology applications that aim to monitor and control the activities of children on electronic devices such as smart phones, tablets and computers. They are also considered one of the important applications in the smart phone applications market.

Parental control applications have several advantages, including:

- Protection from inappropriate material, online fraud, electronic harassment and harmful content.
- Giving parents an opportunity to see what apps and websites their children use and block them if necessary.
- Help guide children and teach them how to use the Internet in a safe manner.
- Determine the appropriate time to use electronic devices and set time limits for use.
- Protection from damages resulting from electronic addiction and providing safety on the Internet.

1.3. Parental Control Apps

Especially since electronic addiction is one of the contemporary diseases that pose a severe threat to physical and psychological health, especially for children.

And given that the unconscious use of websites contributes to the exploitation of personal information, especially on social networks, where it is easy for a person to present himself as another person, and children may give personal information to strangers, such as the home phone number, or their personal and family photos. (Myers, 2019) especially And that many children do not realize that publishing their information, personal details, and pictures online, and giving strangers access to this information through those sites may put them at risk, and therefore children understand how to navigate properly, and participate ethically in the digital society, means that they know the rules. Which qualifies them to be good digital citizens.(Young,2014) Hence, the role of the family emerges through parental mediation in influencing the children's attitude towards websites in order to ensure the protection of the child from the risks of use.The parents' neglect of the child or the way they deal with him is one of the main reasons for directing the child towards using the Internet. Far from their control, the child tries to escape from the surroundings in which he lives and immerses himself in a virtual world, the world of the Internet.[6]

Therefore, we have developed a digital health application that aims to reduce electronic digital risks, which is the parental control application that we offer as a solution to reduce the risks resulting from the excessive use of smart devices by children.

The risks resulting from the excessive use of smart devices are divided into four (04) main sections:

1.3.1. Section One: Health Risks

- Sitting for a long time in front of the computer has a negative effect on memory, and may make some brain functions sluggish, especially long-term memory, as well as brain fatigue.
- Technological devices may cause many serious diseases such as cancer, brain tumors, headaches, stress, fatigue and Parkinson's disease.
- It may pose a danger to the skin, brain, kidneys, and genitals, and the most vulnerable of them is the eye and the spasm of the neck muscles, which is accompanied by the bowing of the head, as well as shoulder pain from uncomfortable and long sitting in front of computers.
- Scientists have revealed that intermittent flashing due to high and varying levels of lighting, as in the animations in these games, causes epileptic seizures in children. And the scientists warned against the continuous and increasing use of vibrating computer games by children, as it may be associated with the disease of trembling arms.[7]

1.3.2. Section Two: Social Risks

- The Internet is a substitute for family and social interaction.
- Isolation.
- Weakness of a child's personality.

- Loss of identity.
- The third section: psychological risks
- Depression and anxiety, especially with his tracking of the latest events and shocking news on the Internet.
- Lack of self respect.
- Mood Swings.
- Losing the meaning of time and not setting priorities, and this is due to too much procrastination.
- Section IV: Behavioral Risks
- Moral deviation due to sites hostile to religions and beliefs, as well as unethical sites.
- Aggressive behaviors due to violent games that promote violence.
- Lack of attention and decreased creativity.
- Delayed social and emotional development.

So, these four risks are capable of leading the lives of our children and even the adults among us to the abyss and to what is not praiseworthy, and accordingly, the application of parental control contributes to reducing them as much as possible, and it can be said that this application is strict with these risks, and this is especially in line with the advantages offered by this application, including:

1. Control time spent on electronic devices: Parental control apps can monitor the time children spend on smartphones and tablets, and set a maximum amount of time allowed each day. This can help reduce addiction to electronic devices and improve mental health.
2. Content Monitoring: Parental control applications can monitor the content that is being browsed on the Internet and ensure that children are not exposed to inappropriate content. This helps maintain mental health and prevent addiction to harmful content.
3. Sleep monitoring: Parental control applications can monitor children's sleeping habits and determine the appropriate time for sleeping and waking up. This helps improve overall health and prevent chronic diseases associated with poor sleep.
4. Monitor incoming calls and text messages: Parents can use monitoring applications to monitor children's interactions and communications on the Internet, and ensure that they do not receive inappropriate or harmful messages.
5. Location tracking: Parental control applications can track children's locations and reduce the risk they may be exposed to.
6. Parental Attention: Parental control apps provide alerts if children are exposed to harmful content and help parents take necessary action immediately.

In this way, parental control applications contribute to staying away from electronic devices at inappropriate times to use them by turning them off completely or limiting themselves to specifying the time of their use only. They also help parents protect their children from the harms resulting from electronic addiction. They provide them with safety on the Internet and help them achieve digital health for children. Here, the role of these applications is evident in maintaining physical and psychological health.

In addition to this, the application that we put in your hands contains the feature of reminding from time to time to monitor the activities of children, and this feature is especially for parents whose control over their children is interrupted or non-existent.

And although parental control apps help parents protect their kids online, it's also important to talk to kids about internet etiquette, social networking, and a host of other activities.

2. Definition of Requirements

2.1. Methodology

Based on the society surrounding our person, especially the family, which is the basic group in this society, and what we see of isolation, tension, anxiety and depression because of technology among almost all of its members, and in particular what happens with our children in terms of their attachment to technology and their lack of awareness of its effectiveness in management and Control over human thought and behavior, as well as their strong attachment to the Internet and electronic games in particular and dangerous, because the instinct in children loves to play even for a whole day, they will not get bored.

And with the advent of modern technology, the matter has made matters worse, so technology is an arrow that hits those in front of it and does not choose or differentiate between young and old. Therefore, in order to reduce this calamity that befell our society, we decided to develop a plan to find out how to protect our noses and our children from this danger that surrounds us, which is electronic addiction, which we see as a solution in **parental control applications and digital health**.

2.2. Search Plan

And just as every researcher has systems and indicators that he relies on to complete his research or study, we have adopted the following:

2.2.1. Survey

And it was an electronic questionnaire and it was shared on social networking sites to answer it to see the extent and depth of people's general thinking, which we rely on in creating our application because there is no need for an application that does not serve the community.

2.2.2. Comparison of some parental control applications

We relied on the comparison between some parental control applications to guide us as well to **the requirements**, which in turn are the basic building blocks for building a high quality parental control / digital health application that is suitable for people's need for it.

2.3. Comparison

Table 1 Comparison table of some of the top apps

Application	Flipd	Keep me out	App Block	SmartCookie
Interface	-Easy introduction to application interfaces. -A simple explanation of everything attached to the pictures.			
Login to the application	With a Google account, an old account, or creating a new account.	After skipping the explanation, the application will be entered normally.	Answer/skip the survey and log into the app.	- Activate the application. -Block everything: If the login is as a parent, then the registration must be registered with a Google account, Facebook, an old account, or creating a new account. If the entry is as a son, it is required to enter the code sent to the father's device.
Application work	-Turning off the phone for a specific period of time, with the ability to respond to important messages only. -It is also required to draw up a list of numbers that can be contacted only in emergencies. Block apps and notifications with them for a specified period of time. - Statistics of numbers, times of using social media, and the most important periods. -Enjoys a music library. -Create a group within the app.	- Quick lock: It is to lock the phone for a specific period of time. - Programming the lock: It consists in specifying a specific time, day, and period in which the phone will be automatically turned off (setting a schedule to	-Quick ban: It is to block all of the applications, websites and keywords. Then grant permissions to this application to perform this process, and user data or information is not shared. - Scheduled blocking: consists of specifying: Days and times when he does not want to be disturbed. Websites you want to block.	-Parental control app with online educational platform. -One app works on two devices. -Works on all devices. -Free in beta. -It forces the child to save screen time by blocking their apps, and to open their apps they have to complete the educational content. -Enhance children's education by providing them with a variety of educational content while

	<ul style="list-style-type: none"> -Numbering of application users according to time kept (this is recognized through statistics). -Create a white list of important applications and a black list of time. -consuming ones. -Allows the user to use prohibited applications, so that this matter affects the evaluation of the application for him. -The application has a free version that has fewer features than the paid version. 	<p>turn off the phone).</p> <ul style="list-style-type: none"> - Turn off the user's phone only. 	<p>Networks you want to block.</p> <p>Maximum usage per day (minutes).</p> <p>The number of times of use per day / hour.</p> <ul style="list-style-type: none"> - Tough ban. - View usage statistics. 	<p>their phone apps are blocked.</p>
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2.4. Survey

Table2 The question of survey and possible responses

The question	Options available to answer it
1- Who do you want to monitor/control the use of mobile devices?	1- a child 2- An adult
2- How many children do you want to monitor?	1- One child 2- Two children 3- Three children 4- Four children 5- Five children 6- Six children
3- How long do you or your son spend on the device?	1- Less than an hour 2- From one hour to two hours 3- 3 to 5 hours 4- More than 5 hours
4- What is the nature of your / your son's use of electronic devices?	1- Games 2- Browsing websites 3- Communication sites 4- Other
5- Can baby monitor/digital health apps handle this?	1- Yes 2- No
6- Have you ever used a digital health app or baby monitor?	1- Yes, I use it regularly 2- Yes, I tried it, but I don't use it now 3- No, I have not used it before
7- Have you tried similar apps?	1- Yes 2- No
8- How often do you use similar applications?	1- daily 2- weekly 3- Rarely
9- What are the shortcomings that you noticed in other applications that may have affected your experience and made you cancel them?	1- Absence of some important features 2- Inaccurate usage statistics 3- The application is difficult to understand 4- The application does not work properly 5- I haven't tried
10- What are the main reasons that prompted you to use a similar application?	1- To limit screen time for myself/my kids 2- To track and monitor the use of the application 3- To control access to unwanted content 4- To set the sleep time or schedule for using the device 5- I haven't tried 6- Other
11- To what extent do you continue to supervise your son?	1- permanently 2- intermittently 3- Non-existent
12- How many applications or websites do you want to block?	1- one 2- two 3- three 4- four 5- five 6- six 7- seven 8- eight
13- Do you think the matter should be addressed by:	1- Turn off the phone 2- Block some applications 3- Block some websites 4- Block access to unwanted websites
14- What makes you turn off the phone?	1- Addiction 2- Wasting time 3- Personal interest
15- What is the benefit of this application on the son/soul, in your opinion?	/
16- What features do you expect in the digital health or child monitoring application?	1- Keep track of used apps 2- Limit screen time (phone usage period) 3- Filtering and blocking unwanted content 4- Set a sleep schedule 5- Geographical location tracking
17- What are your suggestions about implementing digital health or parental control?	/

2.5. Survey Results

From the graphic form, we see that (70.6%) of people chose to control children and monitor their use of mobile devices, which means that the group most affected by the use of electronic devices are children, and therefore our application must be adapted to serve the interests of parental control to guide children Towards a safe device and securing them in the first place, while we do not forget that the application allows the adult to control and close its phone and prohibit what he wants from sites and applications if it is an income for the application as controlling and not controlled (the child)

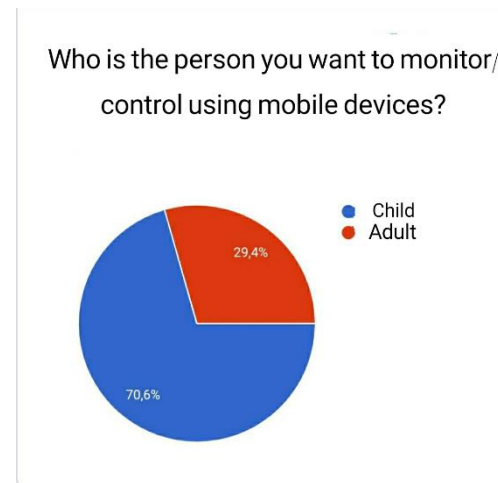


Figure 1 The answer to the first question

We see that the percentage of (47.1%) is for the second option (from one hour to two hours), and this result suggests that it has two possibilities, the first of which is that the person is an adult and is aware of the importance of his time and controls it, and the second possibility is that the person is an adult but controls his son and He determines the duration of the use of electronic devices, and in the two possibilities there is a person who is vigilant and aware of the damage of electronic devices.

While we see that (5.9%) is due to the first option (less than an hour), this option and this percentage represents this few group in society that does not hear the term technology in its life.

While the same percentage is (23.5%) for the third and fourth options, and this is if it indicates that the third cucumber category is on its way to the stage of electronic addiction, while the fourth cucumber category will have reached this stage, and here the danger lies for each of The two categories because both pave the negative result. And what we wanted to know through this question is whether there is a category that is heading towards electronic addiction or not to give it our application, which will be as a step for it to try to get rid of this disease.

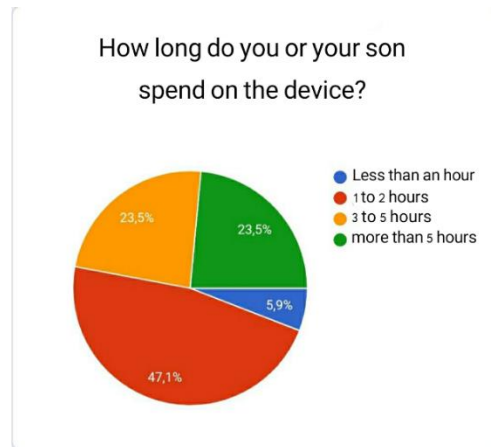


Figure 2 The answer to the third question

The results of the fourth question expressed that the time spent on electronic devices is lost largely on social media, then with a lower percentage of them in electronic games, then followed by browsing the sites and the latter can be at interest such as searching for information or providing service or others, And it can also be in wasting time with harm, such as entering pornographic sites and seeing false news, and everything that would harm the safety of the mind and the soul, and in every case of the three options there is a lost time and effort without obtaining a personal benefit or In general, and this is what we warn of because the consequences of addiction to these sites and games are very severe.

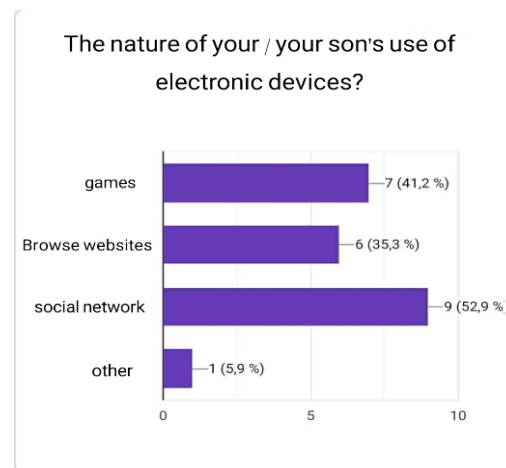


Figure 3 The answer to the fourth question

The results of the fifth question suggest that digital health/parental control applications have an effective role in trying to eliminate electronic addiction and treat this problem.

Likewise, a percentage (82.4%) of people say that these applications can handle the matter, which means that there is a large group that seeks to obtain A cure for electronic addiction and that they really need such an application to raise the embarrassment and hardship in raising children by their involvement in technology and controlling them at a time when children disobey their parents.

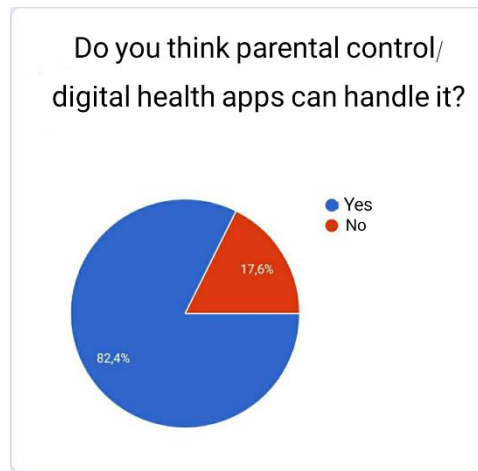


Figure 4 The answer to the fifth question

The results of the ninth question express the deficiencies in applications similar to parental control applications, which are represented, according to the results of the questionnaire, in:

- The absence of some important features in the application.
- Inaccurate usage statistics.
- Difficulty using the application.
- The poor quality of the application and its failure to work as required. And these shortcomings, we must adopt solutions for them and consider them as important characteristics in our application.

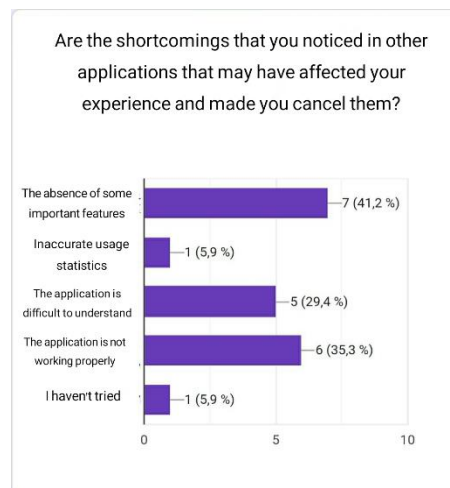


Figure 5 The answer to the ninth question

In the results of the tenth question, there is an indication of the reasons that drive people to use parental control applications or applications similar to them, which we also consider as important characteristics and features in our application, as these reasons were as follows:

- Determine the time allotted for screen use.
- To track and monitor application usage.
- To control access to unwanted content.

- To set the sleep time or schedule.

What are the main reasons that prompted you to use a similar app?

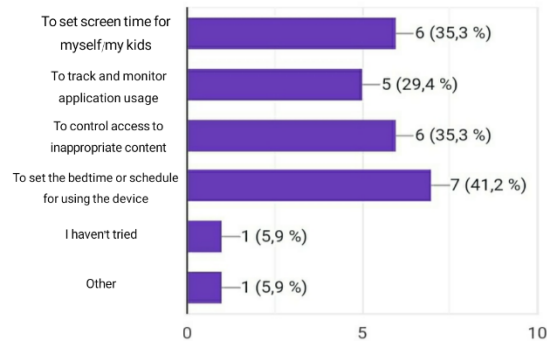


Figure 6 The answer to the tenth question

7- 52.9% is the percentage of continuous parental control of children in an interrupted manner, and this result means that parents in this era have become preoccupied with their children, similar to the fact that 11.8% of parents are completely neglectful of their children, which is what prompted us to put the reminder feature in our application to avoid neglect permanent to the children by the parents. While 35.3% is the percentage of fathers who are always interested in their children, and this is a positive thing.

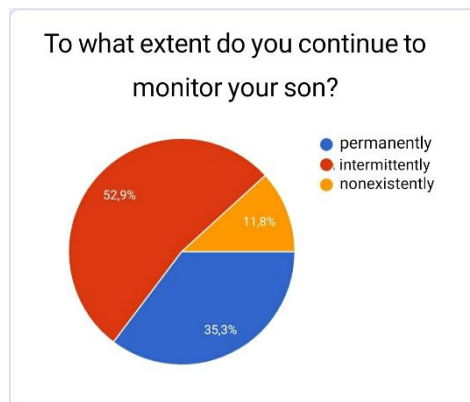


Figure 7 The answer to the eleventh question

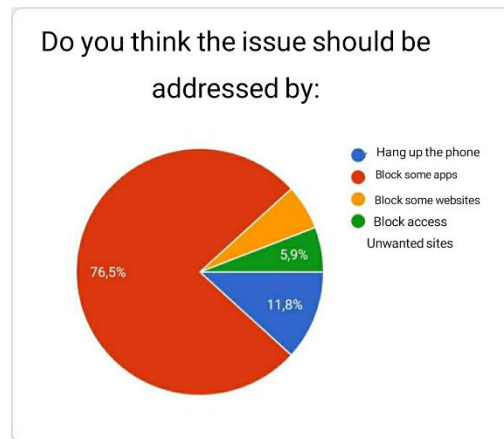


Figure 8 The answer to the thirteenth question

The results of this question revealed that people need to block some applications, in addition to turning off the phone and blocking some websites, as well as blocking access to unwanted websites, which indicates that people's use of electronic devices is lost in navigating between applications, including social networking applications that Our phones are almost invaded now, and therefore we commend that our application is in line with people's need for it.

Since the biggest motive for turning off the phone is wasting time, according to the graph, these results confirm that turning off the phone is an application of the principle of digital health that we adopted in our application to maintain physical and psychological health.

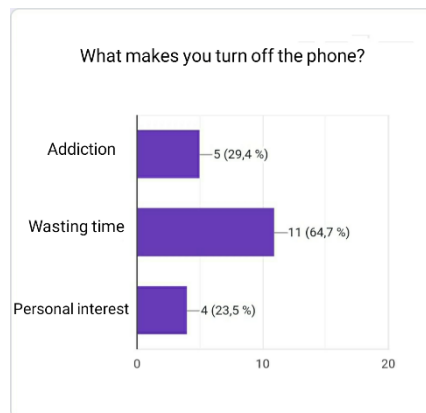


Figure 9 The answer to the fourteenth question

The results of this question indicate the features that people are looking for in the application of parental control / digital health, and for which they are attracted towards this application because its benefit accrues to the son and the soul, as well as to its great role in avoiding falling into the dangers of electronic addiction.

What features do you expect in the digital health or child monitoring application?

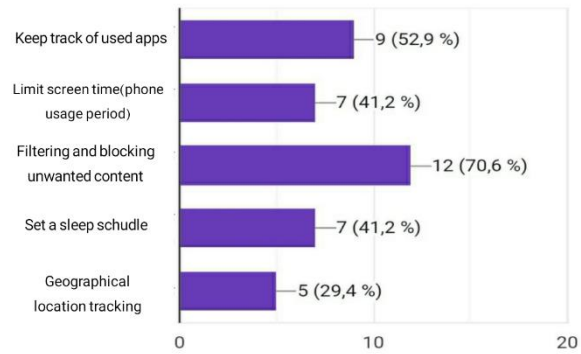


Figure 10 The answer to the sixteenth question

2.6. Functional and Quality Requirements

It is the study of the market and the set of characteristics by which we will distinguish our application, which we reached after conducting the survey and reviewing its results, as well as after conducting a comparison between some parental control /digital health applications.

Table3 Table of Requirements

Must	<ul style="list-style-type: none"> - Must be easy to use. - Must be doesn't appear to the other party. - Must be Internet power, if used. - Login to the application must have with the phone password, code, Google account, or... - You must be greet and give a brief explanation about the application to the users.- Select Language. -One application must be running on both devices. - Must enjoy the scheduled ban feature. - He must limit screen time for the same phone or another phone. - Must allow determine when to use some unwanted apps, websites or content. - Must allow blocking 06 apps/websites for each one of the people you want to control. -The application must have the feature of reminders and alerts. - Do mustn't allow share user data or information.
Should	<ul style="list-style-type: none"> - Should be recommended to block (applications / websites / keywords). - Should have activating the application (allowing access to usage to track other applications and the extent of their use). - Should allow view blocked apps and notifications. - Should allow view usage statistics (browsing / applications / notifications). - Should be determine the maximum usage per day/hour. - In the event that the application appears to the other party, should have it cannot control its privacy and delete it.
May	<ul style="list-style-type: none"> - May recommended in-app quiz (What drives you to this app? / How long do you spend on your phone? / How many times a day do you look at your phone?). - There may be a No Phone Challenge (prohibiting the use of the phone for a specified period while the screen is still on, and submitting math problems, for example, to benefit from it).

3. Design and Implementation

Program engineering and development steps performed in the Unified Modeling Language (UML).

3.1. Use case diagram

Devices:

- Parent device.
- Child device.

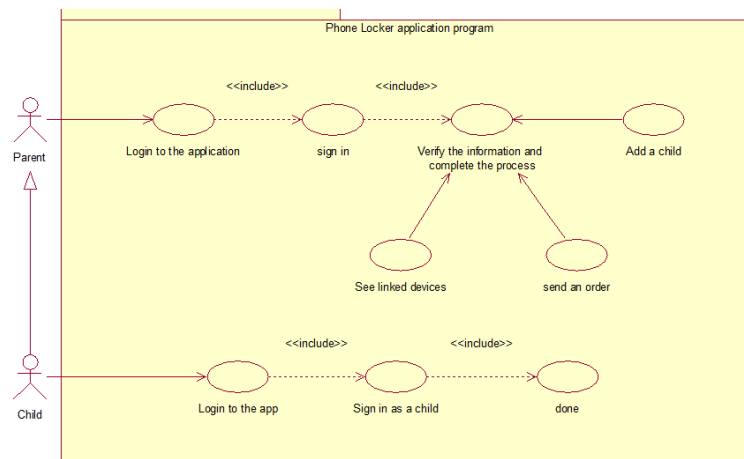


Figure 11: Illustration of use case diagram

3.2. Class diagram

To define classes and highlight the relationship between them.

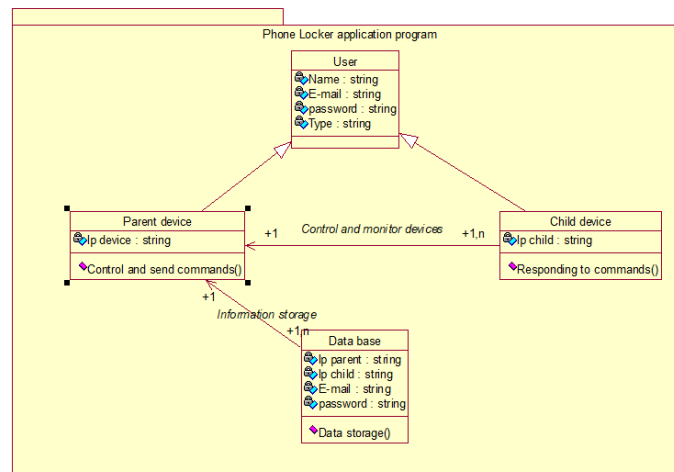


Figure 12: Illustration of a class diagram

3.3. Sequence diagram

To specify how objects collaborate.

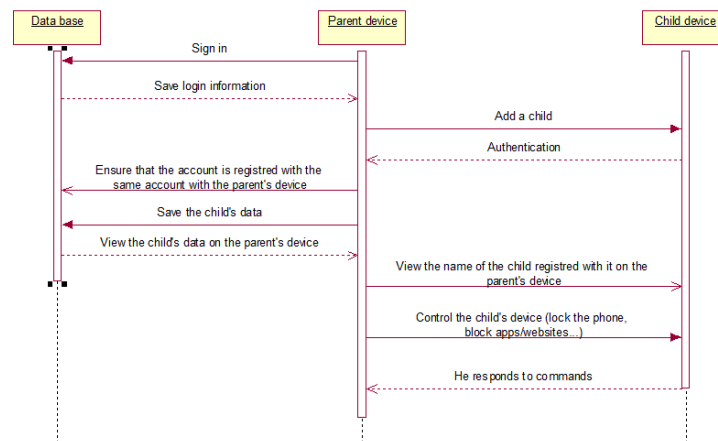


Figure 13: An illustration of a sequence diagram

3.4. Programming:

We built an application to control the child and turn off his phone. To build the look of this application, we used Android Studio, which is well-known in the Java language. We have created several pages that we call in Java as activity, and each activity when created is accompanied by XML.

Splash activity was made as the first page, or let's say the application interface is simple and it takes a short time to enter the Login activity page that contains account registration in the Phone Locker app.

Button was made for login and Textview (to register email and password), and so was Using Firebase Auth (a service that allows developers to add and manage the system). Firebase Auth is part of the suite where the Authentication System provides authentication functions and methods that allow users to create accounts, we used it to create a Google account of course with Google sign client client and Google sign in Options opt.

Configure login settings:

Of course, the onCreate function is used for the lifecycle of the activity.

A simple software method called Validate Data And login was used to verify the validity of the login data entered by the user, and the process is executed if the data is correct.

There is another interface, SignUp. This interface was created to create an account on the Phone Locker application as the father and use it to connect children. Of course, here the process is also done if the data is correct, and if it is wrong, then it is not completed.

Of course, in our application there is an interface to log in as a child, which is login as child device, in which the login is done and this process is done only if the account exists and you have been added by the father.

In the main activity interface that contains 3Buttons:

1. The first is Add child, in which devices are added and linked to the same account.
2. As for the Show device interface, it shows the alert.dialog.option interface, in which you can choose what commands you want to send to the application/phone you want.

My Server was used with the following variables:

- 1.Device Manager to control device policy.
- 2 . As for the activity manager, it was used to access the services of the directorate.

My Admin has a class called Device Admin Receiver that is used to manage device policy.

We used Recycle View, which is a widget in Android Studio, used to display a wide range of data in a flexible and efficient way.

4. Validation

54% of the application necessities (must) have been implemented, and due to time constraints and implementation difficulties, we have 46% left of them, which are:

- The application does not appear to the other party.
- Select Language.
- To enjoy the scheduled ban feature.
- Determine when to use some unwanted apps, websites or content.
- Block 06 apps/websites for each one of the people you want to control.
- The application must have the feature of reminders and alerts.

But we will work to implement it in the future, to satisfy the users of our application in the first place, and then to satisfy our efforts in building our application that reflects our image.

As for the list of application accessories (Should), 17% of the total accessories have been implemented, which are:

In the event that the application appears to the other party, it cannot control its privacy and delete it.

Where we aspire to implement the rest of them in the future, as well as the implementation of the list of improvements (May) that have not been implemented at all.

Where these three lists fall within the context of achieving an effective and safe application that serves the interests of parental control in the first place, hoping to develop it to serve the interests of digital health in various fields, although it achieves part of it in the aspect of maintaining health in terms of moving away from negative ways of carrying electronic devices.

4.1. Application interfaces:

The application that was built as simple and easy to use, and quality was also tested for color blindness, as it was found that they are really suitable, because the blue color brings comfort and calm to the eye, and color blind patients distinguish it.

Validation

Application interfaces:

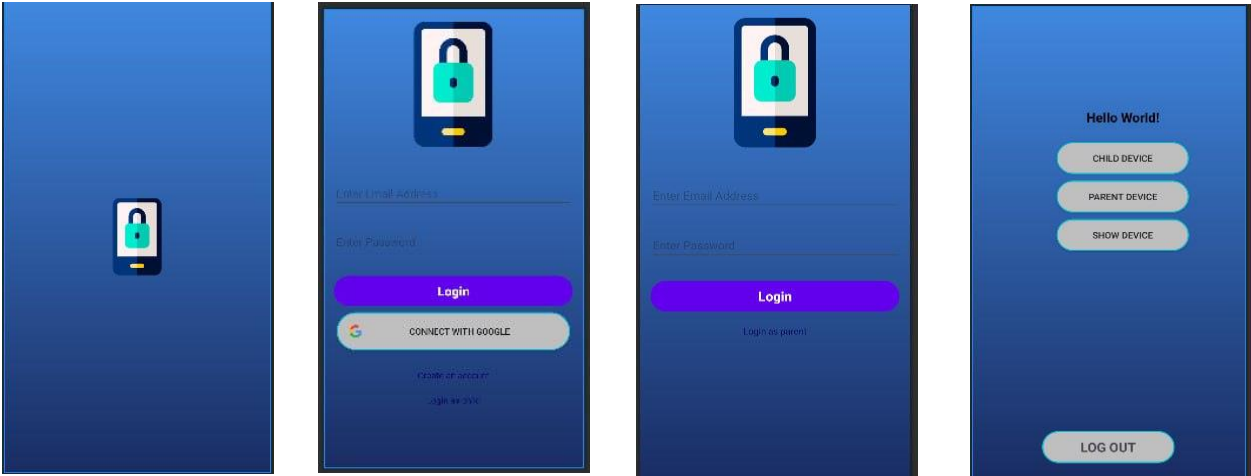


Figure 11 Application UI

Validation



Register

[Already have an account? Login](#)

CHILD DEVICES	
dev0	
dev1	
dev2	
dev3	
dev4	
dev5	
dev6	
dev7	
dev8	
dev9	

Send order

Lock device

Delete

Application interfaces:

Write message here

Send

Exit

Are you sure to delete this child ?

Delete

Exit

Conclusion

The problem of this research stems from the vagueness and ambiguity of how to deal with electronic addiction in light of the presence of parental control applications / digital health, especially with the increase in the negative effects of electronic devices on the child and society. Bad websites and applications such as social media and dangerous games that fall under the framework of entertainment for malicious purposes.

In light of this, this study attempted to address the dangers of electronic addiction by developing an application for parental control / digital health in order to ensure the health of our children psychologically, mentally and physically. Applications in this field, according to the opinions of the majority of society, these applications were a solution to the problem that we raised at the beginning, which would be an alternative behavior to violence with children in their use of digital devices and treating them with civilized behavior represented in monitoring them and preventing them from falling into moral transgressions by prohibiting the use of their phones or harmful applications/websites, and we also aspire to develop our application to display targeted educational content while blocking the phone/applications/websites...to promote parenting and protect health from the dangers of electronic addiction.

Therefore, activating the “parental control / digital health” option would achieve safe search in browsers and applications, as well as setting rules for the healthy use of electronic devices, as well as the participation of children during their presence on these devices and knowing what they are doing. Including imprisoning the disease of electronic addiction from spreading and expanding.

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