

Assignment M2

Ivan Ramirez
iramirez6@gatech.edu

Abstract—Children, very much like any other human beings, do not like to have anything happen to them abruptly. I once read that taking something away or ending an activity for a child abruptly was the equivalent of turning off the television during a football game. To that end, our family has chosen to use timers as a smoother way to end/change activities. The use of timers for many other families is very frequent throughout their days. Smartphones nowadays have timers built in but lately I've wondered if there is a better way to meet the needs of a parent like me who is frequently requesting timers for different activities throughout my day. It is this task, transitioning a child through tasks calmly, that I will be focusing on for this report.

1 NEED FINDING EXERCISE 1 - SURVEY

For my first need for finding exercise I decided to conduct a survey in order to get a better understanding of the way parents interact with their children when ending or changing activities. To do this I created a short survey using a “peer survey” asking general questions around different strategies parents use to end or switch activities as well as the frequency and specific tools that they use.

1.1 Reviewing Results

Reviewing the results for the survey was really eye opening for me. It was very interesting seeing the different reasons why parents would choose to warn their kids in advance before ending or switching activities. What was even more interesting was the different strategies they chose to implement the solution. Some, like me, used timers, others used music or simply a clock, some even used movies as a way of distraction. Equally as interesting was the reasoning behind why the parents acted the way they did. Turns out that most parents are simply looking for a smooth change of activities while avoiding a temper tantrum than anything else. Finally, the data came from a very diverse set of interviewees coming from a wide range of ages and split 50/50 in gender.

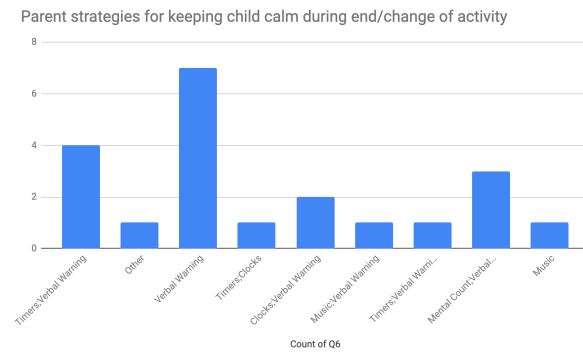


Figure 1—The different strategies parents use to keep their children calm during the end/change of an activity

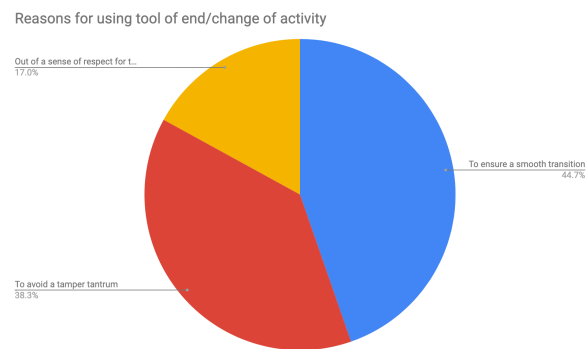


Figure 2—Parents thought process behind using their selected strategy

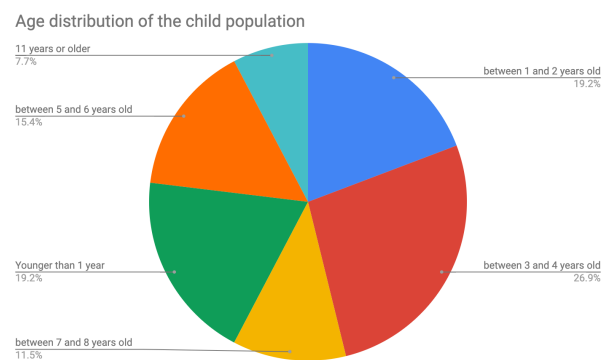


Figure 3—Child age distribution of the parents who took the survey

1.2 Summarizing results

In conclusion I would have to say that a sample of 25 is way too small to make any clear cut conclusions. That being said, I think we can see that regardless of the child's age, parents get creative in the ways that they try to calm their children down when switching or ending activities. It is also safe to say that they put so much time and effort into doing this because they are looking for a calm experience as well as avoiding a temper tantrum. Finally, I would also say that there does not seem to be a clear consensus on the best tool to achieve the task at hand. I wonder if it is at all possible to combine some of the most popular strategies in order to make a very appealing tool.

1.3 Steps taken to control for bias

Ensuring that there was no bias was top of mind throughout this experiment. I was most concerned with social desirability bias. I did my best to control this by ensuring that all survey questions and potential answers sounded as neutral as possible and ensured I was not focusing too much on whether or not parents felt they were being good or bad to their children for implementing or not implementing certain strategies. All in all, my attempt was to get as close as possible to the actual reality from this survey.

NEED FINDING EXERCISE 2 - INTERVIEWS

For this need finding exercise I conducted 3 interviews with parents from my acquaintance circle in order to get different perspectives of how their experiences affect how they handle the task at hand.

2.1 Reviewing Results

I had the chance to speak to three different parents about the different ways they handled their children and the tools they used in order to smoothly transition them from one activity to another. Here I'll summarize and go over some memorable quotes from my interview with the parents. "After play time it was impossible to get our daughter to put the toys down and sit with us at the dining room table but after we had built consistency playing the clean up song after play time was over it made a world of difference ". I also experienced an aha moment when I went from abruptly ending an activity to giving my child

warnings before ending a specific opportunity. What was interesting about talking to interviewee #1 was that songs/music had been used instead of a timer.

The second parent that I interviewed saw a lot of benefits from actually allowing the child to start the timer himself, somehow making him feel part of the process and therefore making the transition/ending of activity a lot smoother.

The final parent I spoke to was very unique. They gave their children a warning that they would be leaving in x minutes but they did not keep track of the time at all and simply started the ending/transition process at an undetermined time later. This was very unique to the way I have personally seen this work before but it was interesting to see different methods be implemented ultimately culminating in the same desired outcome.

2.2 Summarizing results

The biggest take away from me is that there is no “one size fits all” solution. Some children like to feel part of the task process and hear the cue indicating that time is up, others seem to simply trust the parents that the time has passed. I also think that there is a benefit to those parents who use music instead of alarms or buzzers; it might make things a little easier for the children. All in all, I believe that there is room for us to put together a lot of the different ideas of music, timers and child interactions together to come up with a compelling design.

2.3 Steps taken to control for bias

During this section I was most concerned with observer bias. I tried to avoid this by not asking leading questions and also keeping all questions neutral. When I started the interview I began by talking a little about the issues I’ve had with my children in the past when changing or ending activities. I did this to break the ice so to speak to allow for the interviewees to feel more at ease when sharing their experiences. I also took a very non-judgmental approach, smiling and shrugging off everything I was being told, trying very hard not to put any preconceived notions on my interviewees’ minds or making them feel guilty for choosing one option over another.

NEED FINDING EXERCISE 3 - EXISTING USER INTERFACE

For this exercise I looked at the top three existing timers in the market in order to learn what works and what does not work. During this exercise I specifically was

looking for timers and/or wind down apps but it does not seem like there are many wind down apps currently in the market so I had to stick to timers.

3.1 Reviewing Results

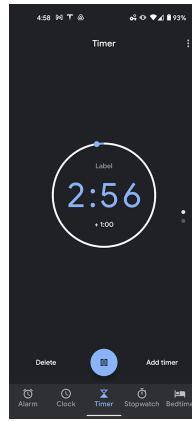


Figure 4—Default Android Timer

The first timer I looked at was the default timer for Android. Very simple and clean but I believe that there are a few features that have a high cognitive load and a big gulf of execution especially for new users. From the main interface the user can delete, start, pause and add a new timer. A bit less intuitive is that you can label your timers and that you can scroll up and down the page and see other timers you've labeled in the past. This is a convenient feature but from the user's perspective almost seems like a hidden feature that confuses the user in the heat of the moment of actually using the tool.

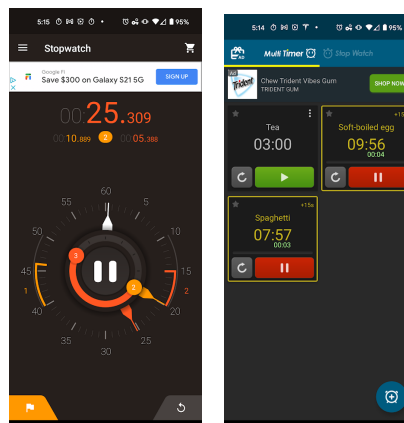


Figure 5—"Stopwatch" and "Hybrid Stopwatch" from The google play store

I also tested two other timer apps from the play store. The first, "Stopwatch" seemed to be very aimed at sports. The stopwatch had a couple of good qualities, primarily the interface made it really easy for the user to tell how much time was left on any 60 second interval and also gave a lot of visual aid on how much time was left on the timer. The cons were that there was such an emphasis on the sport utility, with features such as laps, that it was a bit overwhelming for the specific use case I had in mind.

The second app, "Hybrid Stopwatch" had a great feature around letting you see and manipulate multiple timers from a single screen. This was incredibly helpful and none of the other apps seemed to be able to do this.

3.2 Summarizing results

All in all there do not seem to be a lot of timer based solutions for children ending or switching activities and in my opinion there might be a huge market for it especially among parents. Having multiple timers in a single screen seems very convenient and the "less is more" approach seems to be the way to go for this particular use case.

3.3 Steps taken to control for bias

For this section I was most aware of avoiding confirmation bias. I attempted to avoid this by choosing the top three most popular apps in the play store instead of picking my favorites. I also questioned all my likes and dislikes on what I enjoyed and disliked about my current experience. I also fiddled with all the tools before judging them in order to negate any pre-built habits with interfaces I may have been more familiar with. I also used each throughout my day only after getting familiarized with the tool itself.

DATA INVENTORY

4.1 Who are the users?

The users would be parents of children who use some sort of tool to help their children transition or end a specific activity. Since we are talking about an app that would be used in a potentially stressful situation, I would argue that we would want to target novices. The parents can either be male or female and will be between the ages of 20-40 years old.

4.2 Where are the users?

The users could be in many different places such as the playground, in the kitchen cooking, bathing a small child or anything in between. Users may likely be multitasking or taking care of multiple chores at once.

4.3 What is the context of the task?

Children can often be a handful and handling an emotional child can be even harder. Teaching a child how to handle their emotions to help them cope with certain activities is important. A parent may often be outside or with multiple children. They not only need to be aware of their surroundings but need to be keeping track of their child and their schedule. The parent must constantly be multi-tasking and ensuring that the kids are safe.

4.4 What are their goals?

The goal is to ensure a smooth transition or end of an activity and to keep their child calm during the process.

4.5 What do they need?

They need a way to keep track of a specific amount of time. They may also need something outside of themselves that signals to the child and the parent that the activity is over. They need a distraction to ease the transition.

4.6 What are their tasks?

Physically they are letting the child know they have x time remaining. Cognitively parents are setting a timer to off load the task of keeping track of the allotted time and also diffusing responsibility of the change of activity for the child.

4.7 What are their subtasks?

Subtasks may include actually taking the phone out, finding the correct app and setting the appropriate timer. After the timer has gone off it would be notifying the child by showing him the timer ringing, that it is time to change activities.

DEFINING REQUIREMENTS

5.1 Functionality and Learnability

For functionality and learnability we would be aiming to create an interface that is very simple to use for both novices and experts. It will allow the user to keep several timers labeled for specific scenarios such as “bath time” or “play time”. We will have a large, easily readable but also playful display that keeps track of the time remaining to ensure that the child is engaged if that is what the parent decides. The timer will have loud but soft alarms to notify the child and parent that the time is up. Finally earning a little badge or having a nice child engaging animation would also help distract the child into ending/changing activities.

5.2 Accessibility and Evaluation success

For accessibility we would ensure we are using big button controls to ensure that things can be seen clearly as well as not use colors to signify anything that cannot also be signaled by other means to be considerate of the color blind.

Since we want this to be easy for users to use in stressful situations, I think that time spent in the app would be a good metric to track as well as the occasional satisfaction survey may be enough to determine whether the app has met its goals.

CONTINUED NEEDFINDING

From all the research I’ve done in the above pages I’ve arrived at a few conclusions that I would like to verify perhaps via survey, especially around the notion of needing a distraction in order to assist with the change of activity. I would also like to determine how parents feel about letting the app engage the child by using animations to start or end the timer. I would research how useful it would be to be able to manage multiple timers on a single screen. I would also like to ask how parents would feel about the incorporation of music into such timers. All of these questions arose from the need finding exercise and I believe they would be best addressed via another survey.

APPENDIX

7.1 Survey Raw Data

	Q1	Q2	Q3	Q4	Q6	Q7	Q8	Q9
1	Female	between 26 and 35	between 1 and 2 years old; between 3 and 4 years old	To ensure a smooth transition; To avoid a tantrum	Timers ; Verbal Warning		Often	I give my 4-year-old a 5 min warning before leaving the playground almost every time we go. I let him watch me set the timer on my phone and he presses start\
2	Female	between 36 and 45	between 3 and 4 years old	To ensure a smooth transition; To avoid a tantrum; Out of a sense of respect for the child	Other	We have code word and when I tell the code word, my daughter knows that something is coming to an end. It is the same code word for all activities. It is working so far.	Always	I don't use them.\

3	Male	between 36 and 45	between 7 and 8 years old	To ensure a smooth transition; To avoid a temper tantrum	Timers ; Verbal Warning		Often	I use clock to help my son wind down while transitioning from reading to eating lunch such that I give him 10 minutes to clean up\
4	Female	between 26 and 35	between 1 and 2 years old; between 3 and 4 years old	To ensure a smooth transition; To avoid a temper tantrum; Out of a sense of respect for the child	Verbal Warning		Sometimes	We sometimes use music after breakfast before it's time to get ready for the day. Gives them the opportunity to dance or get their wiggles out before getting into the routine of the day. \
5	Male	between 26 and 35	Younger than 1 year; between 3 and 4 years old	To ensure a smooth transition; To avoid a temper tantrum; Out of a sense of respect for the child	Timers ; Clocks		Often	Always give a 5 minute announcement prior to going to bed.\
6	Female	between 26 and 35	between 3 and 4 years old; between 7 and 8 years old	To ensure a smooth transition; To avoid a temper tantrum	Clocks ; Verbal Warning		Seldomly	We told them we would be leaving the house at a specific time so they knew it was coming.\

7	Male	between 36 and 45	between 7 and 8 years old	To ensure a smooth transition; To avoid a temper tantrum; Out of a sense of respect for the child	Clocks ; Verbal Warning		Often	i almost use it on a regular basis to make my son adhere to his stipulated time for playing video games\
8	Male	between 36 and 45	between 5 and 6 years old	To ensure a smooth transition; To avoid a temper tantrum	Music; Verbal Warning		Often	when we're at the playground i'll let them know they have 15 more minutes\
9	Female	between 26 and 35	Younger than 1 year; between 3 and 4 years old	To avoid a temper tantrum	Timers ; Verbal Warning; Other	Books	Often	I use the '93 cleanup song'94 to help my 3 year old pickup toys before moving onto something else or before bedtime. It's a timer he likes because he loves music and doesn't think of it as being timed.\
10	Male	between 36 and 45	between 5 and 6 years old; between 9 and 10 years old	To ensure a smooth transition; To avoid a temper	Timers ; Verbal Warning		Sometimes	When we are at a playground. I will give a 5 minute warning and set an alarm on my phone. When they hear it, they

				tantrum				know it is time to go. \
1 1	Male	between 36 and 45	11 years or older	To ensure a smooth transition; To avoid a temper tantrum	Verbal Warning		Sometimes	When a child need to get dressed by a certain time before leaving the house\
1 2	Male	between 36 and 45	between 7 and 8 years old	To ensure a smooth transition; To avoid a temper tantrum	Mental Count; Verbal Warning		Seldomly	Prior to an afternoon nap, I turn on the Sonos and switch the the solo piano channel to help her unwind.\
1 3	Female	between 26 and 35	Younger than 1 year	To ensure a smooth transition; To avoid a temper tantrum	Verbal Warning		Sometimes	Before bedtime\
1 4	Male	between 26 and 35	between 3 and 4 years old; between 5 and 6 years old	To avoid a temper tantrum	Verbal Warning		Often	Before bed time or for meal time to let them know when the meal is over\
1 5	Female	between 26 and 35	Younger than 1 year; between 1 and 2 years old	To avoid a temper tantrum; Out of a sense of respect for the child	Mental Count; Verbal Warning		Always	Drain the tub \
1 6	Male	between 36	between 3 and 4	To ensure a	Timers ; Verbal		Sometimes	leaving playground \

		and 45	years old;between 5 and 6 years old	smooth transition;To avoid a tantrum	Warning			
17	Female	between 26 and 35	between 5 and 6 years old	To ensure a smooth transition;To avoid a tantrum	Mental Count; Verbal Warning		Sometimes	stop playing iPad\
18	Female	between 19 and 25	Younger than 1 year	To ensure a smooth transition	Music		Often	When transitioning the bed time, we stop playing listening to relaxing music to wind down \
19	Female	between 26 and 35	between 1 and 2 years old	To ensure a smooth transition	Verbal Warning		Often	When finishing up bath time and going to get PJs on \
20	Female	between 26 and 35	between 3 and 4 years old	To ensure a smooth transition;Out of a sense of respect for the child	Verbal Warning		Often	Before ending a tv show and bath time.\

21	Female	between 26 and 35	between 3 and 4 years old	To ensure a smooth transition	Verbal Warning		Always	The only time we use a timer is when he is eating dinner to put a time limit on his eating. Otherwise he takes over an hour to eat because he plays and doesn't pay attention. So he gets a 30 min timer in front of him to watch count down and he knows when the timer goes off, dinner is over. If he was eating diligently and isn't done, we let him finish eating but otherwise, dinner is DONE. And no more food until breakfast.
22	Male	between 26 and 35	between 1 and 2 years old	To ensure a smooth transition; To avoid a temper tantrum	Music; Mental Count; Verbal Warning; Other	Moana or relaxing cartoon	Sometimes	Time for sleep so we play relaxing songs and use a timer to help keep track of how long we do it for \
23	Male	between 26 and 35	between 1 and 2 years old; between 3 and 4 years old	To ensure a smooth transition; Out of a sense of respect for the	Verbal Warning		Often	I don't use any tools. I just talk to them.

				child				
24	Female	between 36 and 45	between 5 and 6 years old; between 7 and 8 years old	Out of a sense of respect for the child	Verbal Warning		Always	NA. I guess this maybe relevant for babies and toddlers. I've found it is best to talk. It is hard initially but works out eventually.\
25	Female	46 and older	11 years or older	To ensure a smooth transition	Clocks ;Verbal Warning		Often	1- after school getting ready to start homework. 2- from playing to bet time\