

Final Project Write-Up
Stephen Bolt
Behavior Tracker

Executive Summary

Description of Business

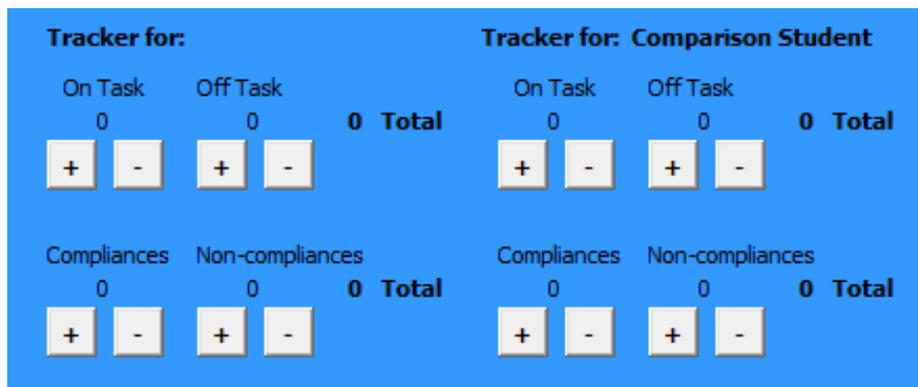
My wife is a special education teacher at a local elementary school. She frequently has to do observations on students to monitor their behavior in class. Currently she uses just a paper/pencil system to track whether or not a student is on task or off task at 15 second intervals for a 15 minute observation. She also tracks whether or not a comparison student is on task or off task. She records what activities the student is engaged in and makes appropriate notes. After she has recorded all of this, she then has to transfer the data to an electronic format and then file in a folder she keeps on hand for each student. Doing it with pencil and paper makes it hard to track progress over time. Difficulty also exists in constantly looking at a watch or phone timer, looking at the students, and then recording on a hard copy.

Overview of System

I created an excel program with a form that can be used to record the behavioral data for both the target and comparison student. The form has tickers that are clicked during each 15 second interval for on task or off task behavior, as well as compliant or noncompliant behavior towards teacher instructions. I have also included a timer on the sheet that is controlled from “Start”, “Stop”, and “Reset” buttons on the form. This allows more efficient recording by avoiding the use of another device such as a phone, clock, or watch. The system timer alerts the recorder in red at the interval marks, along with a sound alerting to “Observe Behavior.” Other important information is recorded on the form, including the student name, date, homeroom teacher, observer name, activities engaged in and observer comments. When the observation is finished, all of the data is imported into the spreadsheet, along with calculated percentages of performance. Additionally, a pivot table is updated on another sheet every time data is recorded and saved.

Implementation Documentation

Tickers



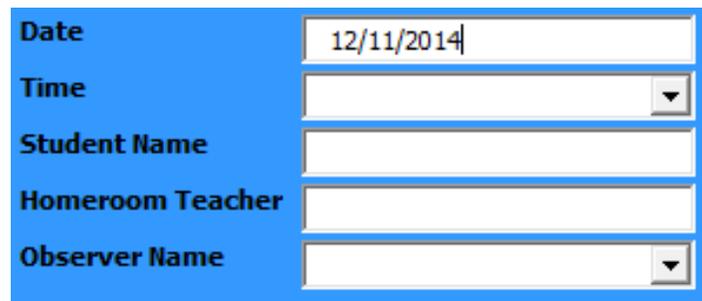
The main objective with the tickers was to simply count the instances of different behaviors. I thought the process would be rather straight forward, but I soon encountered some additional obstacles. I initially thought there would just be a button that would be pressed to add “1” to the counter total. I then realized

that if a user made a mistake, there had to be a way to decrease by “1”, so I added the subtraction buttons. This created the additional problem that if the user clicked the subtraction button while the total was at zero, the total would go negative. I therefore added the condition that if the total dipped below zero, the ticker would reset at zero.

I also used labels for the totals so the data could not be manipulated accidentally. This required me to multiply the default text “0” by “1” to add “1” for every click.

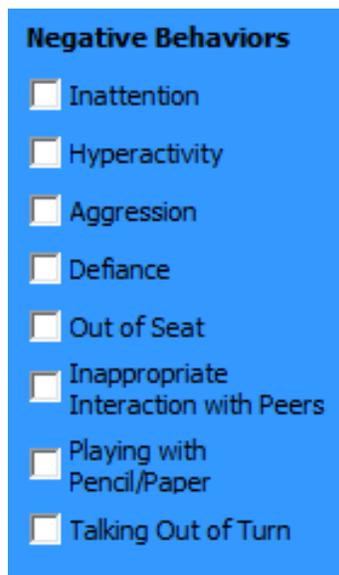
This was the most tedious part of the program because of the amount of ticker totals.

Text Boxes, Combo Boxes, Check Boxes



A screenshot of a form with a blue background. The form contains five input fields, each with a label to its left. The labels are: "Date", "Time", "Student Name", "Homeroom Teacher", and "Observer Name". The "Date" field contains the text "12/11/2014". The "Time" and "Observer Name" fields are dropdown menus, indicated by a small downward arrow on the right side of each field.

For the informational data, I added a few features. I made my code so today’s date would be displayed by default when the form was initialized. For the “Time”, I created a combo box with default times already included to make it easier for the observed to select. I also knew that there were only 4 observers who would be using the program, so I added their names in a combo box for “Observer Name.” I made the tab order user friendly so this data could simply be tabbed through.



A screenshot of a section titled "Negative Behaviors" with a blue background. Below the title is a list of eight items, each with a checkbox to its left. The items are: "Inattention", "Hyperactivity", "Aggression", "Defiance", "Out of Seat", "Inappropriate Interaction with Peers", "Playing with Pencil/Paper", and "Talking Out of Turn". All checkboxes are currently unchecked.

For negative behaviors observed, I created a simple check box listing all of the possible outcomes. This assists the user in simply checking rather than listing everything out.

Comments

For added report customization, I added the comment text box for the observer to record any additional information or comments.

Timer, Timer Alerts

Timer Control

Start Stop Reset

I was able to add a timer that will help the observer keep track of observation time and record data when needed. The timer is controlled by “Start”, “Stop”, and “Reset” buttons. These buttons work just like a regular stop watch.

Timer 00:00

The timer is displayed in the upper-left corner of the sheet. The default is “00:00” and will reset to this anytime the timer is reset or the form is saved or exited.

Timer 00:15

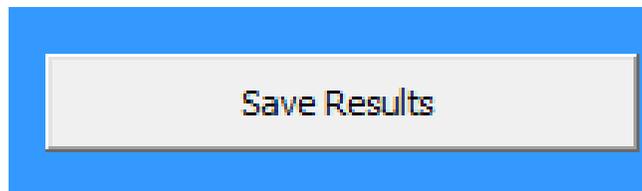
Every 15 seconds, the timer highlights in red to alert the observer to record behavior. There is also a voice that speaks and says “Observe Behavior” in case the observer is not looking at the screen.

Exit, Reset Form



If the user needs to exit or reset the form for any reason, buttons exist on the form to accomplish this task. Exiting the form simply closes the form and resets the timer. Resetting the form resets the form and clears the contents to the default display when the form is initialized.

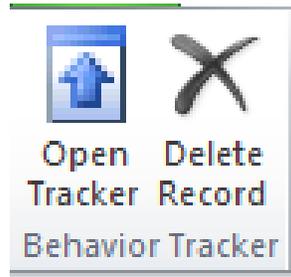
Save Data Results



When results are saved from the form, the program imports the data into the spreadsheet in the correct column. The ticker data is actually calculated into percentages so performance can be measured. Any negative behaviors seen are listed in the correct column. Comments are also included. A pivot table that has already been set up is updated including data from the added record.

Date	Time	Duration	Student	Homeroom Teacher	Observer	Student % on Task	Comparison % On Task	# Student Compliances	S
11/21/2014	10:00 AM	15:08	Stephen Bolt	Ms. Black	Teresa Bolt	60%	93%	2	
11/21/2014	2:00 PM	15:08	Barack Obama	Ms. Bell	Mary Buynak	31%	75%	2	
12/21/2014	8:30 AM	15:08	Mitt Romney	Mr. Grinch	Curtis Twitchell	67%	33%	1	
11/23/2014	11:00 AM	15:08	Stephen Bolt	Ms. Black	Melinda Wilkins	33%	83%	2	
12/9/2014	8:30 AM	15:08	Barack Obama	Teresa Bolt	Curtis Twitchell	75%	69%	4	
12/11/2014	11:00 AM	02:57	Johnny Bravo	Mr. Grinch	Mary Buynak	58%	75%	1	
12/12/2014	2:00 PM	00:37	Johnny Bravo	Mr. Grinch	Melinda Wilkins	100%	67%	2	
12/13/2014	1:00 PM	00:18	Johnny Bravo	Mrs. Grinch	Curtis Twitchell	67%	67%	2	
12/11/2014	2:30 PM	00:17	Stephen Bolt	Dr. Meservy	Teresa Bolt	38%	88%	2	

Ribbon Buttons



I created a ribbon tab for this sheet titled “Behavior Tracker.” A ribbon button exists that opens the form to begin recording data called “Open Tracker.” There is also a button that deletes a selected record called “Delete Record”. The user can select any cell in the row of the record and delete the row. A message box comes up confirming with the user that the selected record should be deleted. If the timer or header rows are selected, the program will prohibit the rows being deleted.

Learning and Conceptual Difficulties

I think the most difficult concept I learned from this project was getting the timer to work like I wanted it to. Making the timer display and work correctly took the longest amount of time and was the hardest thing to understand. I also had to learn how to format the time in VBA to get it to display correctly. The highlighting mechanism for the intervals was also something that was difficult to figure out.

Another thing I learned from this project was that excel can sound a voice corresponding with text. This took some time to get the voice to sound the way I wanted it to (the excel voice does not sound very clear for all words). I thought this was a very cool feature that I could use in the future.

Another difficult part of the project was figuring out all of the counters. Because there were 12 total counters, the coding became pretty tedious to make sure every counter was functioning properly. It was also confusing at times because of all of the label names. They had to be names that made sense, but they also had to be different enough to distinguish while coding. I learned that this is probably a difficult part of more complex coding.

One thing I was pleased with is that I was able to include all of the features from my original proposal. I was not sure I would be able to figure out how to do everything I wanted the project to do, but in the end I was able to learn the concepts necessary to make the form exactly how my wife wanted it. It really boosted my confidence that most anything is possible with VBA.

Assistance

I did not receive substantial assistance completing this project. The only help I used was online resources.