

Website Evaluation: Virtual “Resource Room”

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Introduction

When the COVID-19 pandemic arrived in the United States of America, education shifted from a primarily in-person experience, to a fully remote experience. Educators are concerned with how virtual schooling can be effective while missing critical, in-person interactions. One popular solution to this issue is creating virtual classrooms using Google Classroom or Microsoft PowerPoint, providing an interactive environment for students to explore, much like a real-world classroom or office space (Fuentes & Grimes, 2020). These virtual environments provide a familiar metaphor for students to explore and interact with elements in the virtual classroom, with engaging graphics and resources to supplement the online curriculum. However, there are criticisms of using virtual classrooms, including accessibility and usability issues, which make the transmission of curriculum-related information difficult. These issues are theorized to arise because teachers, who are not necessarily usability or design experts, are required to create these virtual classrooms without guidance or training, introducing issues into the final design due to a lack of knowledge of interaction design. I examine some strengths and weaknesses of the virtual classrooms being employed in school districts across the country through the evaluation of a client's own virtual room, called a "resource room". The evaluation also includes background research on multiple virtual rooms used within and outside the client's school district, with a synthesis of examples of good and bad design. The evaluation also includes design suggestions for future iterations of the virtual resource room.

The client, Kimberly, is a 26-year-old school psychologist intern for Pennsauken High School in Pennsauken, New Jersey. Kimberly is also my sister. The client earned her master's degree in school psychology in 2019. Kimberly is currently responsible for conducting group and independent counseling for schoolchildren ranging in age from five to 18 years old. Her

counseling areas include social skills, body image, relationships, internalizing disorders (e.g. anxiety disorders), and externalizing disorders (e.g. conduct disorder).

The client and I began our professional relationship while discussing our graduate programs' portfolio requirements, where I mentioned I would like to conduct a website evaluation, but had trouble meeting people in person due to the pandemic. Kimberly mentioned that she made a website for her school but is so embarrassed of the site, that she actively tells her clients to email her instead of inviting them to visit and obtain resources. I offered to perform an evaluation of the website after its first iteration so that Kimberly could have a website that she is proud of and can increase her professional impression. I also explained to the client that I will present the results of the evaluation in a way she can understand, because editing the site is restricted to staff members only. The client accepted the proposal, and planning for the front-end analysis began.

Phase 1: The Front-End Analysis

To begin the front-end analysis, I conducted an informal interview with Kimberly to understand the website's purpose, the identification of users, and her perceived usability issues with the website. The entire project took place over the course of three weeks. The client and I met in person to conduct the informal interview. I prepared a set of questions before meeting to ensure the conversation would stay focused on the website's goal, the primary and secondary users of this website, and what aspects of the website is concerning the client.

The Website

The website being evaluated is a collection of resources and information for school counseling, known as a “Resource Room”. Each member of the mental health staff at Pennsauken public schools is responsible for creating a resource room using Google Slides. The resource rooms are set up like a virtual office or classroom space that contains interactive elements for users. These elements contain data such as parent resources, mental health information, and games and mindfulness strategies for students. This mirrors the concept of a real-world resource room, which in a school psychology context refers to a separate classroom for students with special needs go to receive extra learning and individualized attention. The type of learning the student receives depends on their individualized education programs (IEP).

To access Kimberly and other staff members’ resource rooms, a user must first navigate to Pennsauken Public School’s website at <https://www.pennsauken.net/>. Then, the user navigates to the “Mental Health” tab, then selects “Meet the Mental Health Professionals” from the drop-down menu. From there, the user can enter a desired counselor’s resource room by clicking on the “enter” link.

The Users

The primary users of this website are Pennsauken public school students from grades K-12 (approximately five years old to 18 years old) and their parents and legal guardians (above 18 years old). Younger students (below grade 6) typically have their parents or legal guardians access information about counseling. The students who access information through Kimberly’s webpage are diagnosed with mental illness and/or special educational needs, are currently being

screened for showing signs of needing mental health services or are seeking mental health services by their own volition. The client explains that while younger children access her own webpage with their parents, her current primary users are high school students (age 14-18).

Student diversity data gathered from the government indicate 46% of the student population is Hispanic, 31% Black, 12% Asian, and 10% White. The interview indicated that many of the students' parents only speak Spanish, while having little or no understanding of English. Furthermore, data indicates 67% of students come from homes that are economically disadvantaged, meaning 67% of students are currently receiving free or reduced-priced lunches.

The Client's Concerns

As the resource room website is in its first iteration, the client, Kimberly, reports wanting to make changes to improve the usability and amount of resources available to students and parents. The client wishes to increase the consistency of the website's pages and interaction styles. Resources to add include book suggestions for students, movie suggestions, and parental resources, including information about upcoming parent information Zoom meetings.

Additionally, the client reported that parents of the students have difficulty accessing English-only content because the student population is predominantly Hispanic. Therefore, providing resources in Spanish or creating a language toggle option is a concern. The client also intends to add more presentations on different mental health topics to the "social-emotional learning" page.

Research

For the client to understand the principles of interaction design, the design lifecycle, and the results of the website evaluation, I suggested to research other staff members' "resource rooms" with the client to understand what is good design, and what is not. In turn, the client educated me on her duties as a school psychologist, which informs design through identifying her primary and secondary users' needs.



Figure 1. A sample Bitmoji virtual classroom.

Kimberly and I identified patterns in the virtual resource rooms, according to the age of the primary users and the type of virtual room being conveyed (e.g., library, school psychology, math department). Virtual resource rooms tend to use bright colors and engaging graphics to draw users' interest and keep them on the page. There are multiple interactive elements to click

on, and there is variability between these interactions. For example, one could click on a hyperlink to gain resources about LGBT youth or can click on a ball on the floor to see it bounce.

Figure 1 provides an example of the “virtual room” metaphor used by educators and other staff to provide information to students and parents. These rooms are excellent to present a virtual counterpart of the real-world environment where students cannot physically visit due to current restrictions. Everything placed in the virtual classroom is similar to what the students would expect in a physical classroom: there is a desk, a whiteboard, bookshelves, and posters. There are issues with object scaling and relative size where objects that are expected to be larger (because they are closer to the user) are smaller, such as in the case of the boom box versus the size of the picture frame on the bookshelf. There is little jargon used, and instead uses language young users can understand.

Users are afforded freedom to explore and click on elements in the virtual space, but there are no visible hyperlinks assigned to objects, making it difficult for the user to understand what will occur after clicking an element. Additionally, if a user clicks on an element and performs an unintended action as a result, the only way to reverse these actions are by using the browser’s back button. There are no “emergency exits” marked in the virtual classroom.

The most frequently violated usability heuristic for the Bitmoji virtual classrooms is that these websites are typically not minimalist. They contain many colors which strain the user’s absolute judgement limitations, and the number of elements clutter the screen also strain the user’s working memory through the competition of multiple elements in a given fixation point. If a user is trying to complete a certain action, like emailing the staff member, an exhaustive conjunctive visual search task must be completed to find an element that may lead the user to an

email. In the case of Figure 1, this element is the avatar's laptop on their desk, which displays the text, "Contact me".

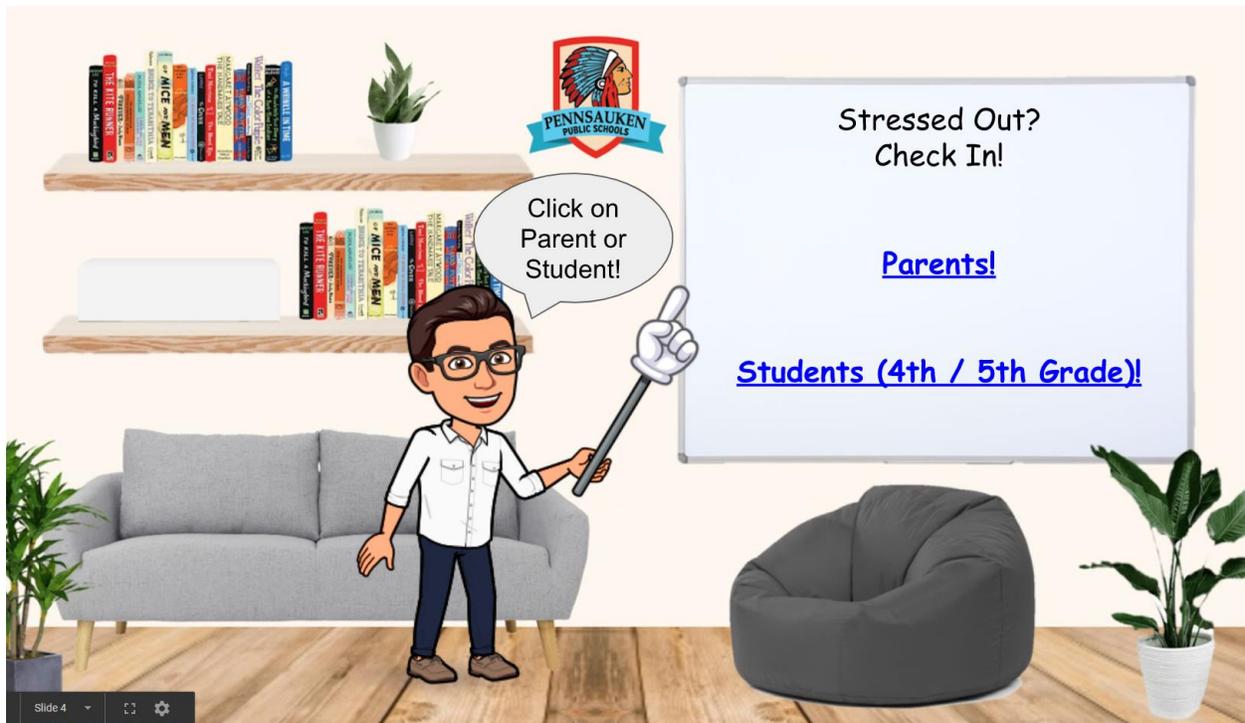


Figure 2. Screenshot of another School Psychologist's virtual resource room.

Figure 2 is an example from another school psychologist's virtual resource room. This example shows an example of providing help to the user. The avatar instructs the user to click on one of the two interactive elements on this page. While a design should not need additional explanation of its features or what the user is able to do, explicitly telling the user to click on something is helpful for those not familiar with the virtual room metaphor, or a user who would otherwise have no idea where to start interacting with the webpage. A usability issue in this example is the incompatibility between the avatar's dialogue and the interactive element. "Parent" does not match "Parents!" and "Student" does not match "Students (4th/5th Grade)!. For consistency, these elements should be named exactly like how it was phrased in the help tip dialogue.

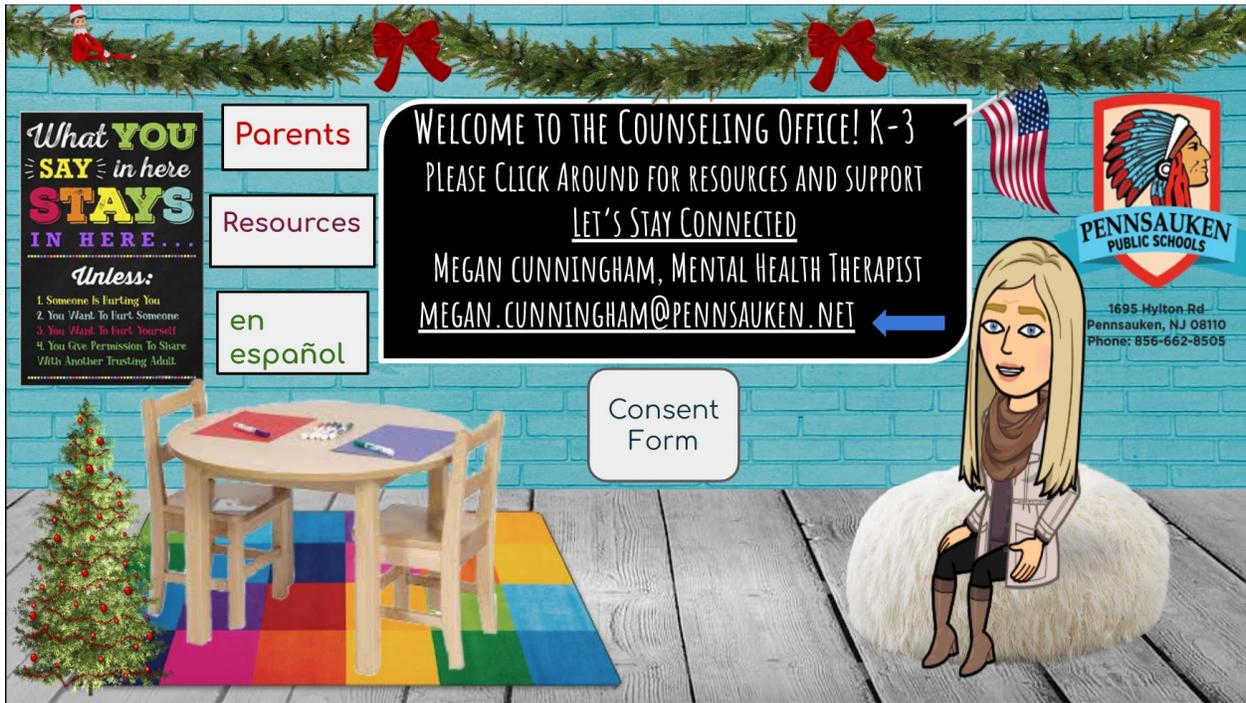


Figure 3.1. Megan's virtual resource room (English version).

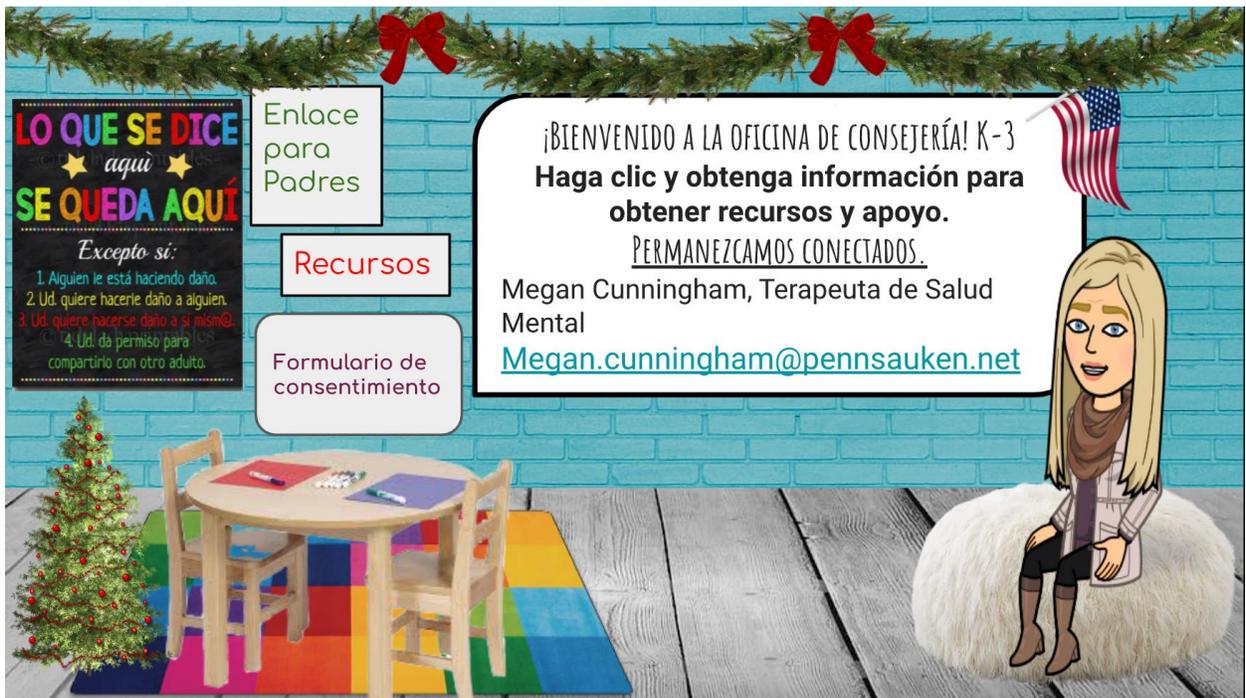


Figure 3.2. Megan's virtual resource room (Spanish version).

Figure 3.1 and 3.2 represents Megan, one of the school's mental health therapist's resource room. An important part of user-centered design is considering who you are designing for. Understanding those user's capabilities, what they are trying to achieve, and considering the best way to achieve those goals is crucial for designing an interactive product. Pennsauken School district has a large Hispanic population, where many of the parents only communicate in Spanish, or communicates in English, but has a marked decrease in proficiency compared to their Spanish ability. Megan's clients are in the K-3rd grade bracket (ages 5-9), meaning her page will receive most of the traffic from the clients' parents. Thus, adding a button "en español" (in Spanish) for the user to view the resource room's information in Spanish is helpful for Spanish-speaking users.

Megan's virtual resource room is not without usability issues. There are aesthetic issues on her page. Some of the elements on this webpage violate object-centered cues humans use to perceive depth, decreasing the effect of exploring a "3-D" room. An example of this is the Christmas tree, which seems to be sized smaller than what would be expected due to its low position in the scene (meaning the object is closer to us, the viewer), and we know the familiar size of a Christmas tree, compared to the table and chairs, should be larger. Consistency is also violated on this webpage, where the rectangular and circular elements showing "Parents", "Resources", "en español", and "Consent Form" are all different shapes and sizes. To increase the consistency of the website, these interactive elements should be of a uniform size and shape. Another usability issue concerns the underlined text, "Let's stay connected". A user could reasonably assume that this is a clickable link due to its similar appearance to the hyperlinked text containing Megan's email address, but this text is simply underlined with no interactivity.

Related Products



Bitmoji Christmas Classroom Template

\$3.00



Bitmoji Office Template

\$3.00



Bitmoji Preschool Classroom Template

\$3.00

Figure 4. Bitmoji classroom templates can be found on teacher-centric marketplaces.

Something which surprised both the client and I is that these Google Slide virtual classrooms have become so ubiquitous in education that an educator can buy pre-made templates to use. I was confused by the wide usage of Bitmoji avatars in the classrooms, but after talking to the client and researching more about the topic, I had a greater understanding why Bitmojis are being used over other avatars. With the COVID-19 pandemic, education has made the sudden transition to remote learning, necessitating the use of a familiar setting in a newly unfamiliar world for school-aged children. Bitmoji allows dynamic poses and more context-specific avatars than other resources, and many students are already familiar with using these avatars while messaging other people through mobile applications. A concern the client had was that her high-school aged students may find the use of Bitmojis patronizing and “out of touch” with the true

needs of this age bracket of users. The district requires the use of Bitmojis, so they will have to stay in the redesign.

An important point of discussion with the client is my concern for requiring staff to create their own websites for students and teachers without necessarily understanding design and usability principles. This point is especially highlighted in cases for students who require accessibility, where even a normal website may be difficult to use, let alone a website with a bombardment of colors and objects which violates usability principles and places high cognitive load on users. Such users may need additional support like walking them through the room, or a help function.

Requirements

With the information gathered from the informal interview and the background research, I constructed a list of requirements for the website along with the client.

1. Accessible to all users
 - a. Spanish language option
 - b. Clear exits
 - c. Affordances
2. Consistency of user interaction and web elements
 - a. Frustration free
 - b. Icons used on webpage
 - c. Links must consistently afford clicking
3. Maintaining a “warm and inviting” tone to the layout

- a. Primary users are children
 - b. Keep the safe, familiar room metaphor
 - c. Snapchat's Bitmojis are frequently used throughout the district as a familiar element to users. Students already use these in non-academic communication.
 - d. Speaks the user's language
 - i. No overly clinical terms. If these terms must be included, explain in layman's terms
4. Increase quality of non-data space
- a. Increase resolution of background images
 - b. Use non-data space intelligently
 - i. This space can be used to spatially separate incompatible tasks or information.
 - c. Limit the use of colors
 - i. But still make the feel of the website comfortable

Non-functional requirements

1. Interactions must be constrained to what is possible using Google Slides
 - a. Hyperlinks
 - i. Can link to outside sites and elements, but initial interaction must stay in Google Slide

Phase Two: Website Evaluation and Suggestions for the Next Iteration

Kimberly, the client, provided me a link to her virtual resource room

<https://docs.google.com/presentation/d/e/2PACX->

[1vQn756OqmIpMd094IH7MApLMN6PfsLO1uA9SgDkRQDZfVzdXVbXXjCj-](https://docs.google.com/presentation/d/e/2PACX-1vQn756OqmIpMd094IH7MApLMN6PfsLO1uA9SgDkRQDZfVzdXVbXXjCj-)

[5bunm_6A_1gAYJklslnkjNp/pub?start=true&loop=false&delayms=60000&slide=id.p](#)) to complete this evaluation. The client explained to me that because her webpage is still in its first iteration, there is missing content. Because the webpage is still underdeveloped, the website evaluation is highly concentrated on usability, so future iterations containing more content can have better direction in user interactivity and content delivery.



Figure 5. The client's virtual resource room (Home Page).

The way the virtual resource room is set up is by having the user start at the home page (Figure 5). Then, the user is free to click on interactive elements (denoted by a change in mouse state from regular pointer to link select "hand" pointer). The elements within boxes take the user either to outside websites (in the case of the mental health grant information link), or to other areas of the virtual resource room (Social-emotional learning, Bullying and Mental health).

Strengths of the Current Design

The current iteration features the use of the “room” metaphor used in other virtual classrooms. Kimberly’s room looks minimalist and modern, having few decorations and a “mature” feel, compared to other virtual spaces featuring bright colors, many children’s toys, and rainbow-colored rugs. The client’s room is appropriately designed, because her current students are high school aged; including “childish” décor might be too condescending to the teenage user.

The room metaphor enables users to explore the virtual environment like how they would navigate in the real world. Users can click on any non-hyperlinked space to advance to another section of the virtual room, where there is different information to interact with. Familiar physical objects such as a couch, plants, shelves, the floor, and walls afford the user to click on and advance into the virtual resource room. Some student users have disorders that impair verbal communication and reading comprehension, so using an interaction style that facilitates moving around in a space, compared to a conversing or instructing interaction style is more appropriate.

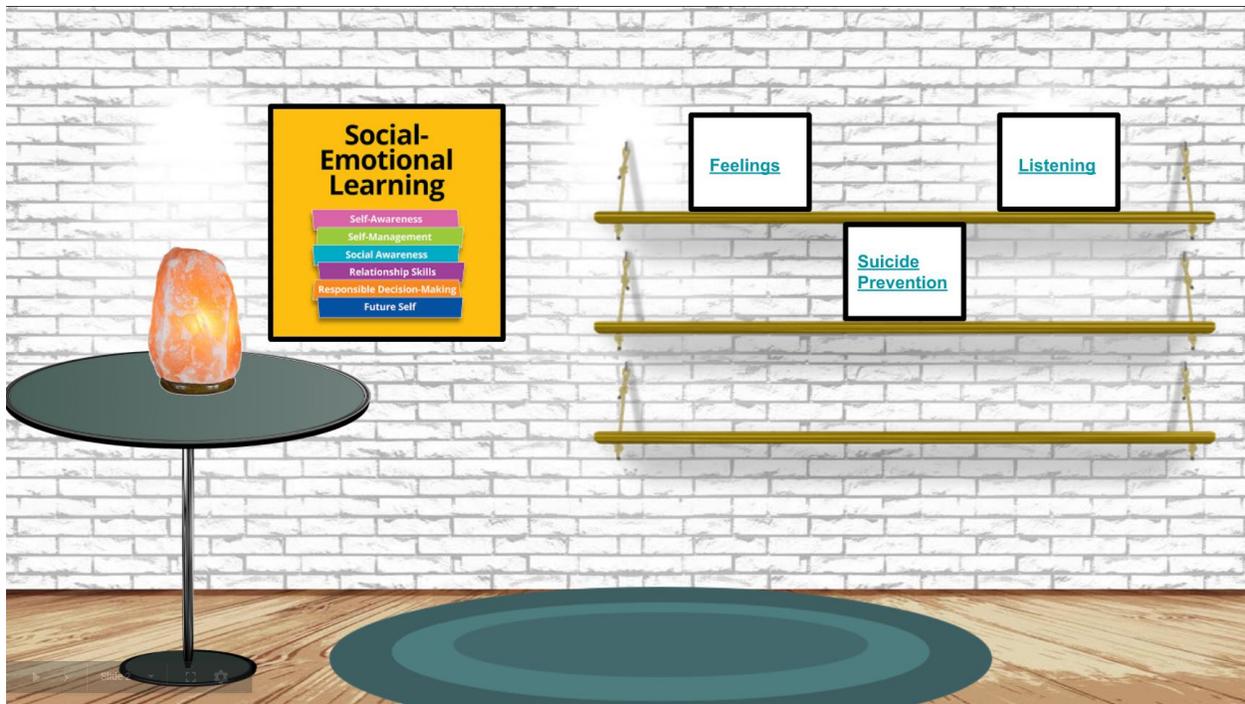


Figure 6. The client’s “Social-Emotional Learning” portion of her virtual resource room.

The various shelves placed in different sections of the resource room invites user interaction. The black and white boxes allow users to separate and combine different resources by Gestalt grouping principles such as similarity and proximity. For example, in Figure 6, we know that the “Feelings”, “Listening”, and “Suicide Prevention” elements are integrated with one another because of their similarity in shape and color, while we know the blue rug element is not integrated with these resources due to its dissimilarity in shape, color, and distance to the black and white boxes. Clicking on the elements on the shelf allow us to access that information, similar to interacting with real-life objects on a shelf (e.g., picking up items, inspecting, playing). This style of interaction is familiar to users, especially of a young age, who may not have experience navigating through websites with menus and search navigations. For the client’s older students, this style of interaction is like a traditional website, where icons containing different links to resources are provided.

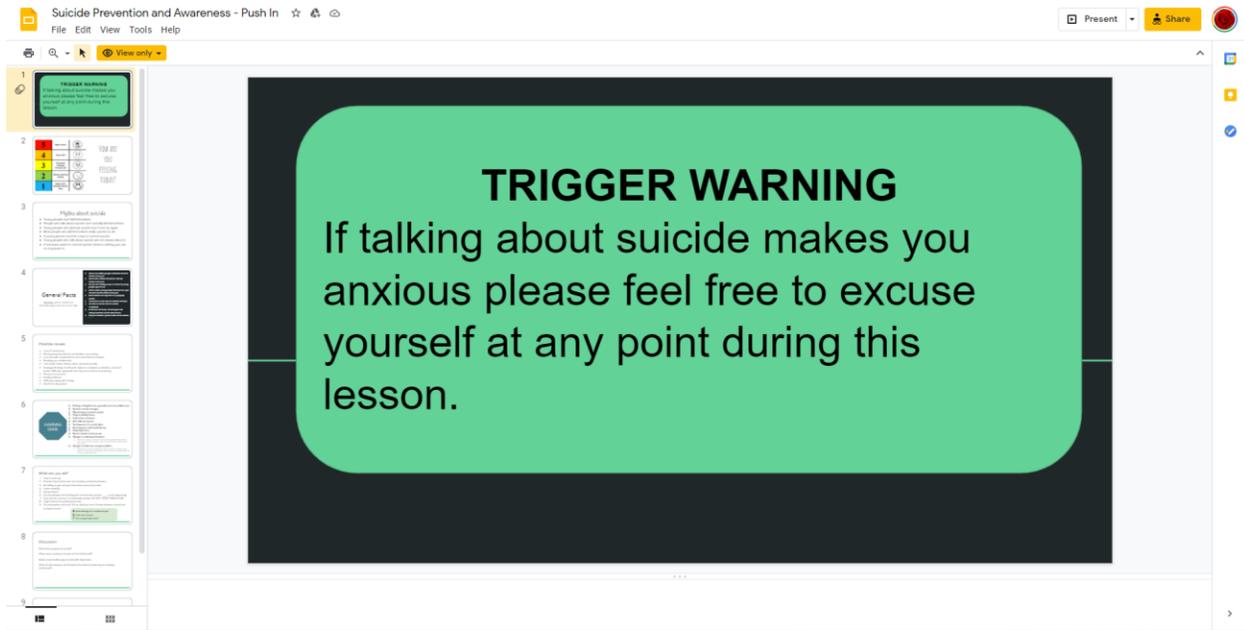


Figure 7. The presentation hyperlinked to the “Suicide Prevention” element on the Socio-emotional learning resources.

The Socio-emotional learning resources (Figure 6) are consistent, with each link leading a corresponding presentation (Figure 7). No dead links were found. The client created more lessons that she wishes to post on the webpage, so I reminded her to keep the text boxes consistent in size and color when she adds more content.



Figure 8. View of Kimberly’s virtual resource room through a cell phone (Google Pixel 3a).

Another strength of the current webpage design is that users do not need to scroll for physical content, because mental health resources are all on the “home” room space. This is especially helpful if a student or parent was accessing the resource room’s website on a tablet or a cell phone (Figure 8). Kimberly must keep in mind that some users may access her resources through one of these devices, so it is good practice to make hyperlinked and interactive items big enough to be selected through touch on smaller screens.

Weaknesses of the Current Design

A weakness of the virtual resource room is in user control. Test users of this page reported difficulty discovering how to navigate forward, backward, and back to the home page. While the room metaphor is useful for an interactive webpage because the users can navigate and arrive at different places in the room, there are weaknesses in how to escape or go back to a previous section. For the user to go back to the previous section of the room, they must either

click back through their web browser, or hover around the bottom-left portion of the screen to make the Google Slides navigation widget appear. The user can navigate back to the previous section by clicking the back-arrow button. The webpage may benefit from native navigation buttons integrated into the physical webpage, even when considering the redundancy.

There is no clear order or arrangement of hyperlinked elements on the bookshelves, which may decrease user performance through violation of the proximity compatibility principle. “The Social-emotional learning” link and the “Bullying and mental health” link leads users to different areas of the virtual resource room, but these links are interspersed amongst links leading to external websites and documents. I recommend keeping in-room links together, while keeping these link separate from external-content links.



Figure 9. The webpage’s title, as it appears on Google Chrome.

The webpage’s title is inappropriately named, “Copy of Ms. Gaull’s Room”. Similar errors and inconsistencies are visible on other staff members’ virtual resource room titles. I suggest removing the “Copy of” portion and update the title to simply “Ms. Gaull’s Room” for future iterations.



Figure 10. Low resolution poster.

Kimberly's virtual resource room has issues with combining low-resolution, difficult to read graphics with high-resolution graphics. To improve the website's consistency and overall readability, low resolution graphics used for decoration should be updated with higher resolution graphics to match the resolution of the other graphics. In addition, keeping in mind how humans perceive 3-D through object-centered cues is important for keeping the users immersed in the interactive environment. I recommend adjusting the size of objects placed within the scene so none violates these object-centered cues (e.g., making the beanbag chair smaller than the couch on the homepage, adjusting the size of the table and Himalayan salt lamp on the "Social-emotional learning" section of the resource room).



Figure 11. The yellow highlighting denotes the segment of the element that is hyperlinked, versus parts of the element that are not hyperlinked (no highlighter ink).

The virtual resource room's hyperlinks are inconsistent (Figure 11). For example, the elements "About Miss Gaul" and "Resources" are complete and properly hyperlinked, while other elements show incomplete hyperlinking. The "Social" in the "Social-Emotional Learning" element is the only part hyperlinked. A similar usability error happens within the "Bullying and Mental Health" element, where the word "Bullying" is the only hyperlinked text. Interestingly, the element entitled, "Pennsauken Mental Health Grant Information" only has the right and bottom part of the box hyperlinked, with none of the text hyperlinked. A similar error happens with the transparent email icon, where there is a portion of the right side of the icon not hyperlinked. A consequence of the inconsistent hyperlinks is that when a user intends to access

that resource, the webpage acts as if you are trying to click on “dead space”, advancing the slide by one and unintentionally showing a different portion of the resource room instead. I recommend fixing the hyperlinks so that the entirety of icons and the underlined text of the different resource elements are hyperlinked to improve the consistency of the interaction.



Figure 12. The “Just Checking In” element. Clicking this brings the user to a Google Forms page functioning as a way for students to contact Kimberly and talk privately about life events.

The “Just Checking In” (Figure 12) element is salient because this is the only .gif element in the webpage, but there are usability issues concerning accessibility. Users not logged into Google Classroom are unable to access the student check-in form, where Kimberly intended the form to be used by anyone accessing her webpage. I discovered this error was unintentional when I asked the client for a screenshot of the check-in form to add to this report, and she asked why I could not see the form as an outsider of the school district. Because of the importance of checking in with a school psychologist for the proper identification of risks and prioritization of

care, this form should be visible to everyone instantaneously, without a log in. While the “Just Checking In” element is dynamic and eye catching, users may be confused of the action resulting from clicking the element. I recommend adding an arrow element with the text, “Check in here! (Google Forms)” to dispel any ambiguity over which action will be carried out and where the user will be taken to.

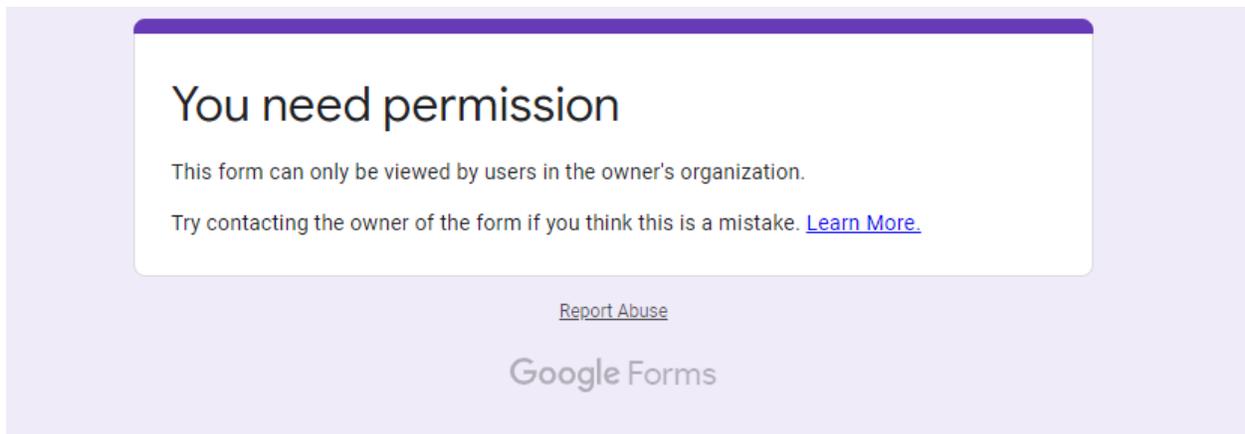
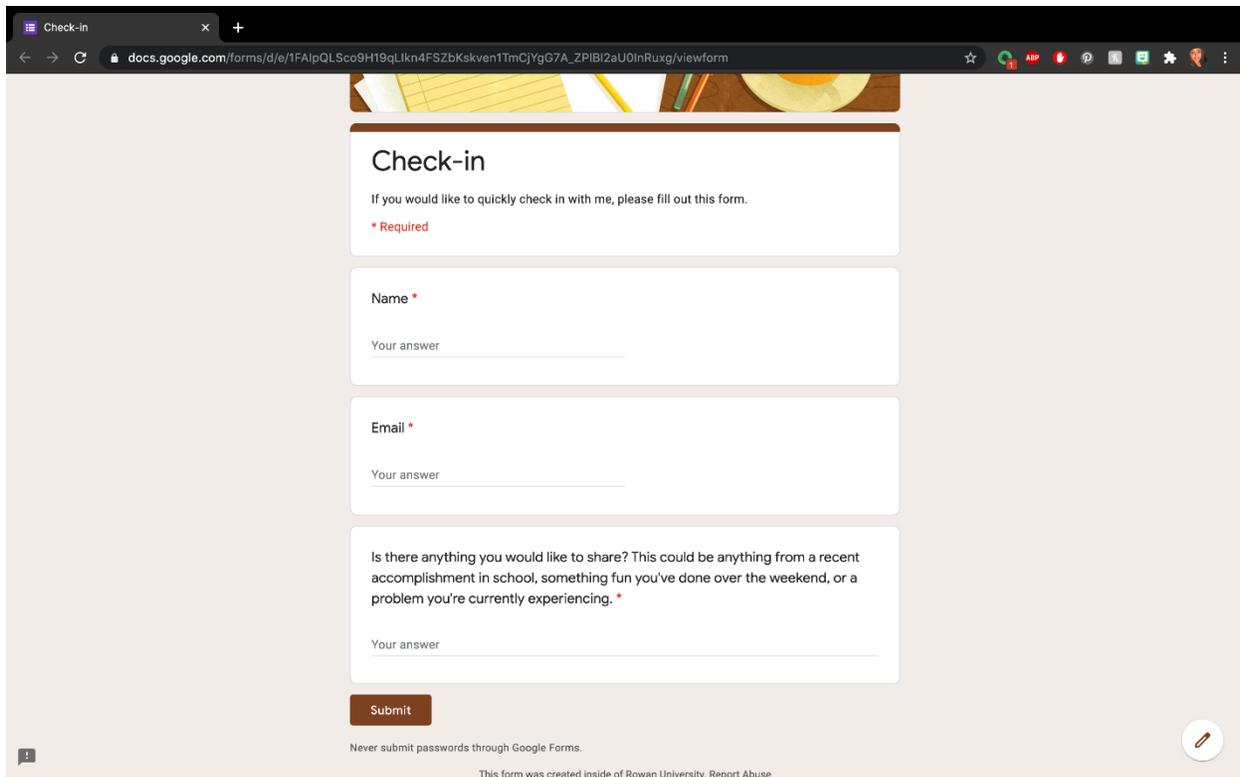


Figure 13.1. Forbidden access screen. The intended screen is a Google Forms Check-in page.



The image shows a web browser window displaying a Google Forms page titled "Check-in". The browser's address bar shows the URL: docs.google.com/forms/d/e/1FAIpQLSco9H19qLlkn4FSZbKskven1TmCjYgG7A_ZPIBI2aU0InRuxg/viewform. The form itself has a light beige background and a header section with a decorative image of a notebook and pencils. The header text reads "Check-in" and "If you would like to quickly check in with me, please fill out this form." Below this, there is a red asterisk and the word "Required". The form contains three input fields: "Name *", "Email *", and a larger text area for a question: "Is there anything you would like to share? This could be anything from a recent accomplishment in school, something fun you've done over the weekend, or a problem you're currently experiencing. *". Each field has a "Your answer" placeholder. At the bottom left of the form is a brown "Submit" button. At the bottom center, there is a small text warning: "Never submit passwords through Google Forms." and a footer note: "This form was created inside of Rowan University. Report Abuse". A small edit icon is visible in the bottom right corner.

Figure 13.2. The correct screen for the Check-in form.



Figure 14. The “Mindfulness” area of Kimberly’s virtual resource room. Under construction.

One of the areas of Kimberly’s resource room, denoted as “Slide 3” (Figure 14) is underdeveloped, only being populated by two links and low-resolution graphics. This area is not yet linked to an element in the homepage. The client plans to add links to mindfulness videos and activities for students in this spot, but she has yet to research content. I recommend that she either removes this slide, or denotes this area as “under construction” until more content is added.

Spanish Language Option

Kimberly’s main concern for the website was the lack of an option for Spanish speakers. The Pennsauken School District has a Hispanic majority. Many parents accessing information from the website are primarily Spanish speakers, necessitating this feature. Other sections of the Pennsauken school website are multilingual, so adding a Spanish version will help accessibility and consistency. I offered to help translate a portion of Kimberly’s website to have a prototype

for eventual implementation. Special thanks to Erika Gonzalez for correcting my initial translation, as I am not fluent in Spanish.

Hello, and welcome to the 2020-2021 school year!

My name is Kimberly Gauld and I am a school psychology intern in the Pennsauken School District. I earned my Bachelor of Arts degree in Psychology with a minor in Pre-Health Studies and my Masters degree in School Psychology at Rowan University. I am currently pursuing an Educational Specialist (Ed.S.) degree in School Psychology at Rowan University. You may find me around many of the Pennsauken schools within the district, including Pennsauken High School, Carson Elementary School, and Delair Elementary School.

Please feel free to reach out to me at any time. Your success in school is highly valuable to me and I am here to support you. My email address is kimberly.gauld@pennsauken.net. Thank you, and I'm looking forward to working with everyone and having our best school year yet!

Figure 15.1. The client's "About Miss Gauld" blurb (English version).

¡Hola! Les doy la bienvenida al nuevo ciclo escolar 2020-2021.

Mi nombre es Kimberly Gauld y soy una pasante de psicología en el distrito escolar de Pennsauken. Recibí mi licenciatura en humanidades de psicología con una asignatura secundaria en estudios de pre-salud. Mi maestría fue en la Universidad de Rowan en psicología. Estoy siguiendo mi educación como especialista en educación en la escuela de psicología en la universidad de Rowan. Me pueden encontrar en muchas de las escuelas dentro el distrito Pennsauken, eso incluye la preparatoria de Pennsauken, la escuela primaria de Carson y la escuela primaria Delair.

Por favor no duden en comunicarse conmigo. El éxito en su trabajo escolar es muy importante para mí y estoy aquí para apoyarlos. Mi correo electrónico es kimberly.gauld@pennsauken.net. Muchas gracias, y espero colaborar con todos en el futuro para tener el mejor ciclo escolar posible.

Figure 15.2. The client's "About Miss Gauld" blurb (Spanish version).

I suggested to add a salient "en español" button to the home screen to toggle between the English and Spanish versions of the site. Resources for parents will be translated in the future.

Cognitive Walkthrough

I was interested in evaluating how discoverable simple actions are through the context of Kimberly's resource room. A cognitive walkthrough of how to obtain the client's email address was performed to evaluate how well the information on the webpage is conveyed. I utilized a middle-aged female tester in place of an artificial persona to carry out the walkthrough, as she is in the same age group as the parents who access the client's page. Before the walkthrough, I prepared three questions, adapted from Preece, Rogers, and Sharp (2015): Will the user know what to do to achieve this task?, Will the user notice that the correct action is available? Will the user know through feedback that they have made an incorrect or correct decision?.

Table 1 displays the results of the simple cognitive walkthrough.

Goal: Obtaining the email address of the client.

Task Step	Q1: User knew what to do to achieve the task?	Q2: User noticed that the correct action is available?	Q3: User knew through feedback that they have made an incorrect or correct decision?
1. Click the envelope icon.	No. Chose a different path, instead clicking on the "About Ms. Gaul" element, opening an external Google Document displaying biography information and finally, an email address at the end of the biography.	No. After the task was completed, I explained that there was an email icon on the landing page, but the user was still unable to find the envelope icon.	Yes. When the user clicked on the wrong element, they realized something was wrong because "It was not easy enough. There must be an easier way".

Table 1. Notes from the simple cognitive walkthrough.



Figure 16. The arrangement of hyperlinked items on the home page. All the hyperlinked items, save for the transparent email icon, are located inside squares of uniform shape and size, suggesting they are grouped together.

The results from the cognitive walkthrough was surprising to the client. Although the client intended the envelope button to be easy to use and accessible in one click, the user was unable to find the icon due to its transparency, instead exploring a different task path where the user clicks on the hyperlink for “About Ms. Gaul”, sending them to a Google Docs page describing the client, with the email at the bottom. While both paths lead to the same result, the action most visible to the user was the least efficient action, with more clickthrough than the other, suggested to encase the envelope icon in the same black and white box the other resource

links are located inside. While the client argued that the envelope icon seemed “visible enough”, the dissimilarity to the rest of the hyperlinked items surrounding the icon, coupled with the low saliency of the transparent vector made detection difficult during the cognitive walkthrough.

Phase Three: Presentation of Results and Future Considerations

I presented the findings of the website evaluation to the client in person. I walked the client through the results, making sure she understood each point and recommendation. The client took issue with retooling the email icon

A limitation of this website evaluation is that I am the sole evaluator of this website, which, according to Nielsen’s (1994) discount usability, would still invite missed usability errors. I made the client aware of this limitation.

Kimberly stated she will start another iteration of the website to submit to the system administrator at her workplace, correcting the usability errors found during the evaluation. I will be working closely with Kimberly to ensure her next webpage iteration is interactive and informative, but also efficient and enjoyable. The client hopes to get the next iteration of her website live soon and reports that she is more confident in her website. Kimberly reported that she learned more about the field of human factors, the design lifecycle, and usability principles than she knew before. The client expressed interest in discussing the contents of this report with the mental health grant team in an upcoming meeting. This is to make them aware of potential usability issues with other staff members’ virtual resource rooms to facilitate the access of important mental health information across the district.

The large increase in the usage of virtual rooms to deliver supplemental educational information necessitates usability evaluations due to novice developers creating content with little to no usability training. Usability considerations are not only important for neurotypical users, but neurodivergent users as well, where poor webpage usability may frustrate, overstimulate, or confuse users. Accessibility becomes an issue when users cannot navigate or find elements to interact within the virtual room without seeking help from another person. I intend Kimberly's virtual resource room's evaluation to be used as a critique of the current trend of using "Bitmoji Classrooms" in childhood education settings and stress the importance of considering simple webpage usability principles while designing these virtual spaces.

References

- Fuentes, D., & Grimes, N. (2020). Creating Google Classrooms Using Bitmoji and Google Slides: An early Pandemic Pedagogical Response. In *SITE Interactive Conference* (pp. 114-119). Association for the Advancement of Computing in Education (AACE).
- Nielsen, J. (1994). Guerrilla HCI: Using discount usability engineering to penetrate the intimidation barrier. *Cost-justifying usability*, 245-272.
- Preece, J., Rogers, Y., & Sharp, H. (2015). *Interaction design: Beyond human-computer interaction*. Chichester, West Sussex, UK: John Wiley & Sons.

Appendix A

Figures used in this document.



Figure 1. A sample Bitmoji virtual classroom.

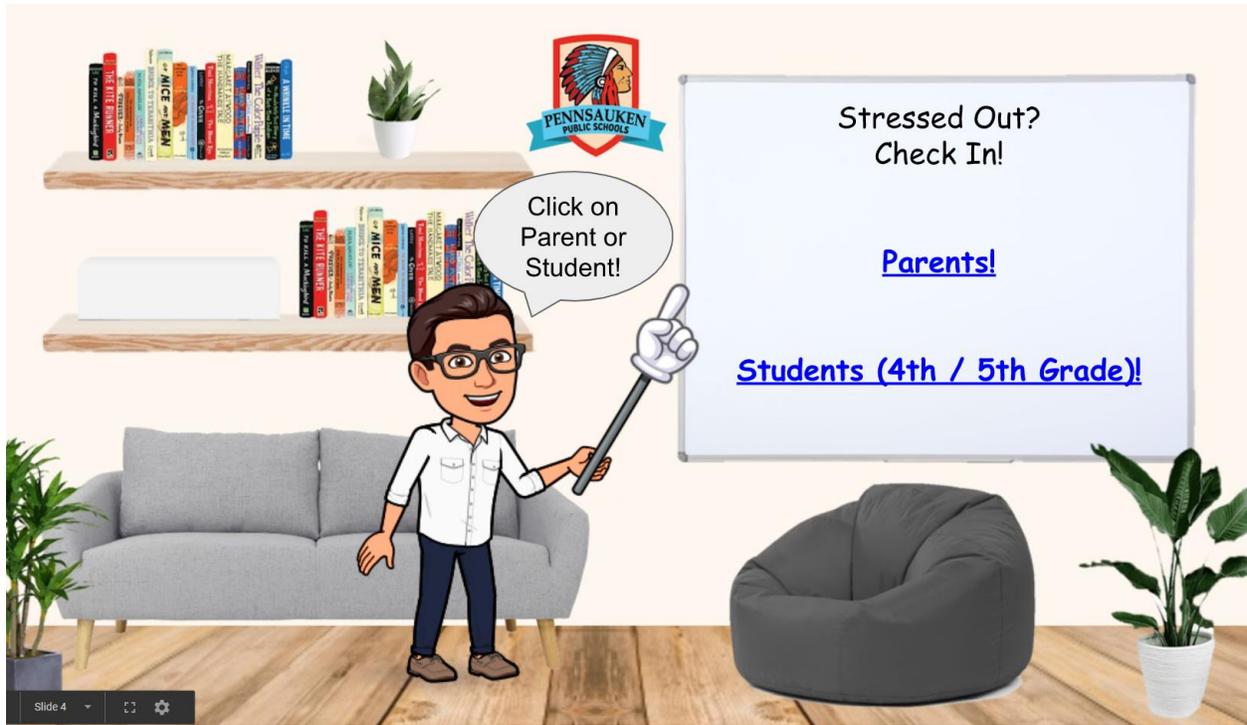


Figure 2. Screenshot of another School Psychologist’s virtual resource room.

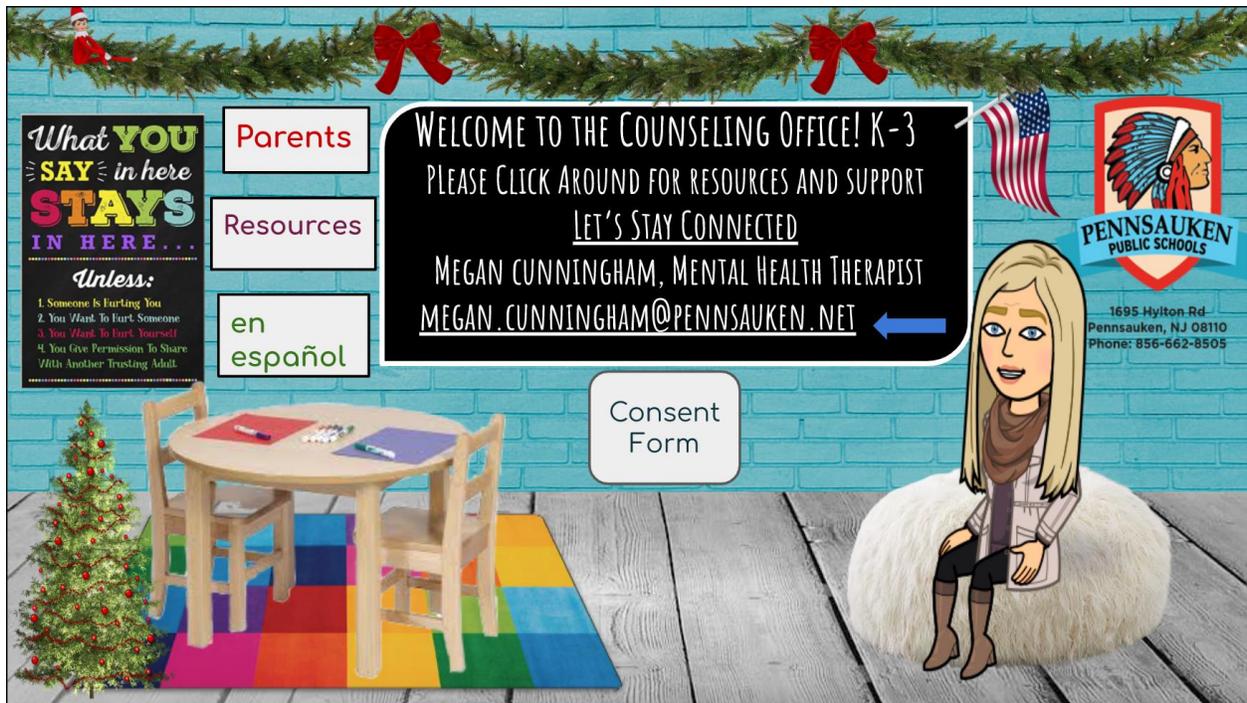


Figure 3.1. Megan’s virtual resource room (English version).

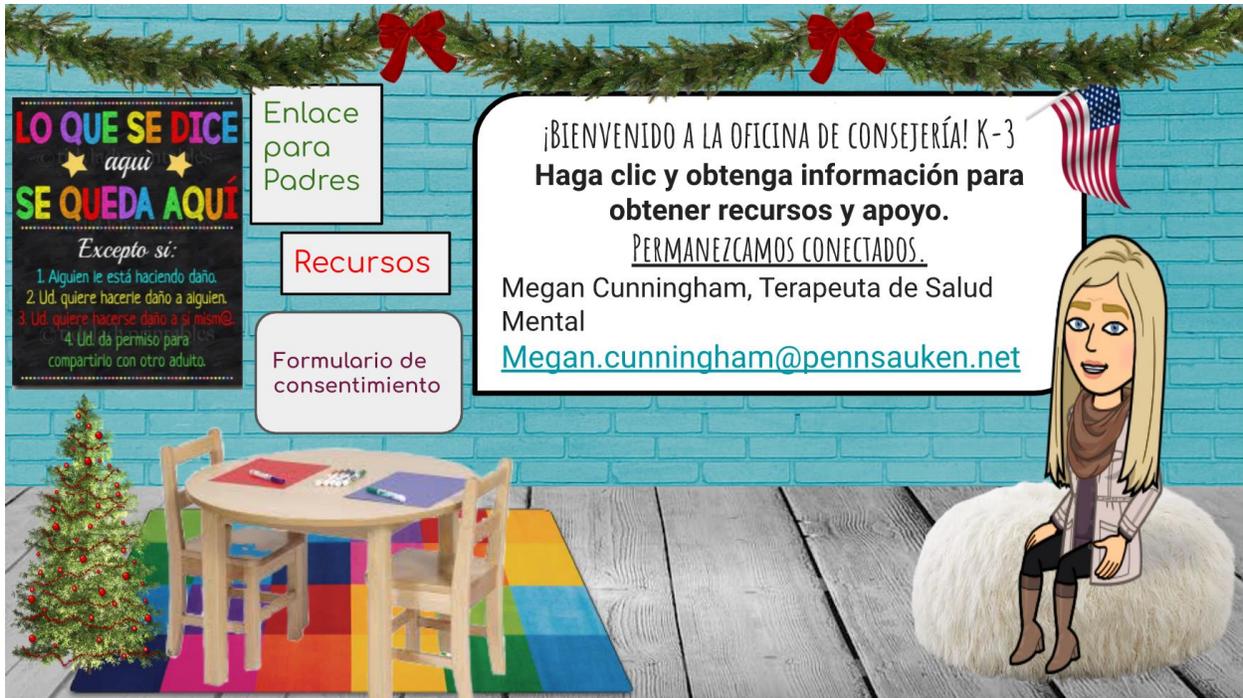


Figure 3.2. Megan’s virtual resource room (Spanish version).

Related Products



**Bitmoji
Christmas
Classroom
Template**

\$3.00



**Bitmoji Office
Template**

\$3.00



**Bitmoji
Preschool
Classroom
Template**

\$3.00

Figure 4. Bitmoji classroom templates can be found on teacher-centric marketplaces.



Figure 5. The client’s virtual resource room (Home Page).

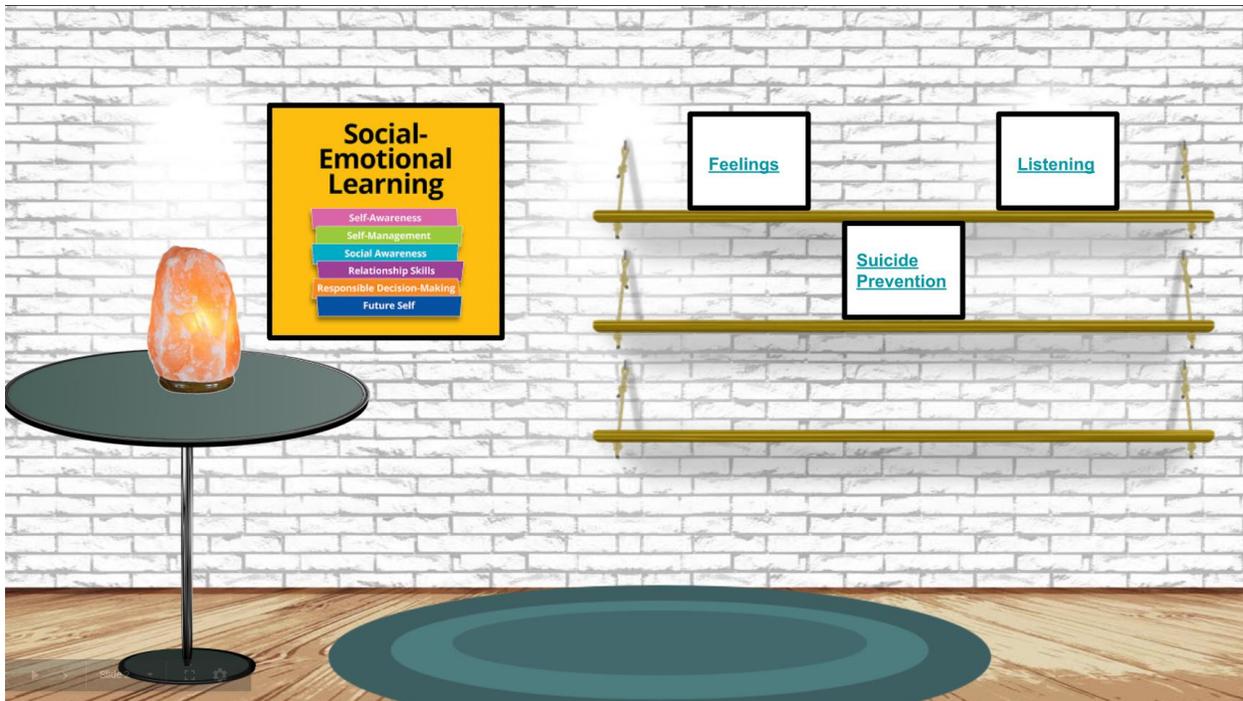


Figure 6. The client’s “Social-Emotional Learning” portion of her virtual resource room.

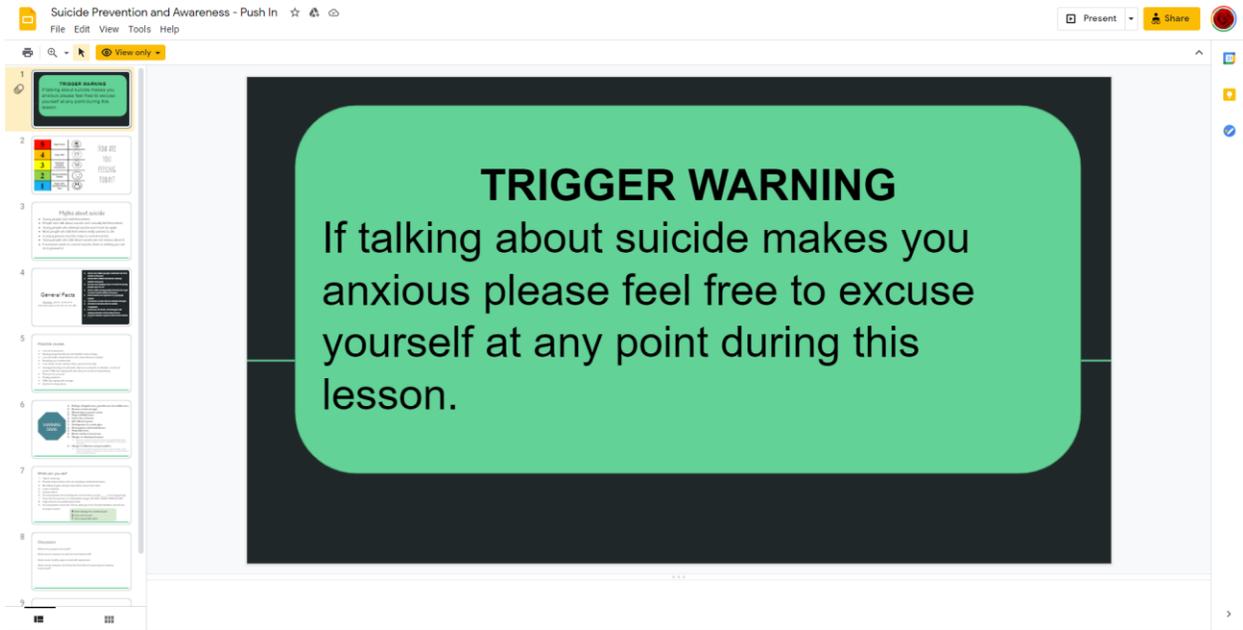


Figure 7. The presentation hyperlinked to the “Suicide Prevention” element on the Socio-emotional learning resources.



Figure 8. View of Kimberly’s virtual resource room through a cell phone (Google Pixel 3a).

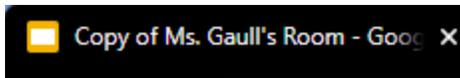


Figure 9. The webpage's title, as it appears on Google Chrome.



Figure 10. Low resolution poster.



Figure 11. The yellow highlighting denotes the segment of the element that is hyperlinked, versus parts of the element that are not hyperlinked (no highlighter ink).



Figure 12. The “Just Checking In” element. Clicking this brings the user to a Google Forms page functioning as a way for students to contact Kimberly and talk privately about life events.

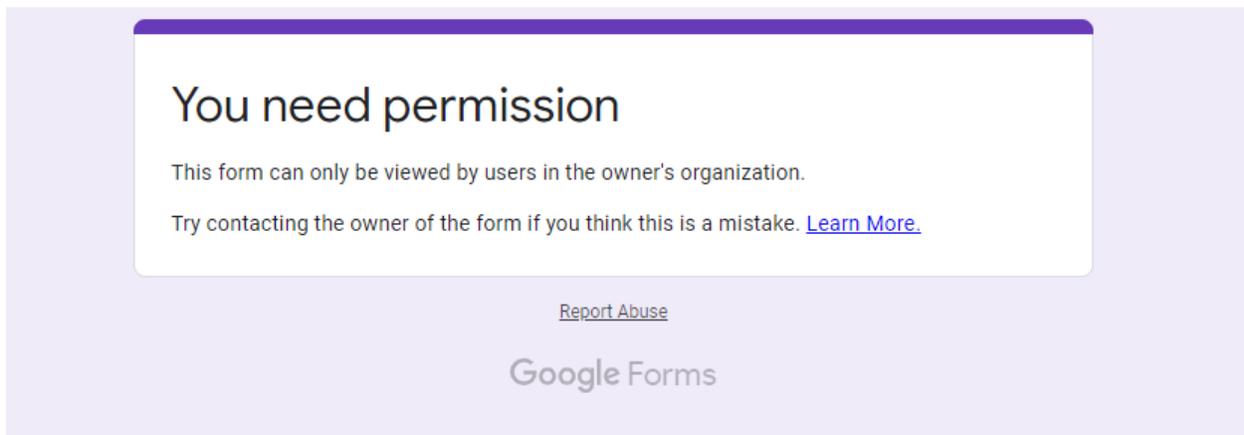


Figure 13.1. Forbidden access screen. The intended screen is a Google Forms Check-in page.

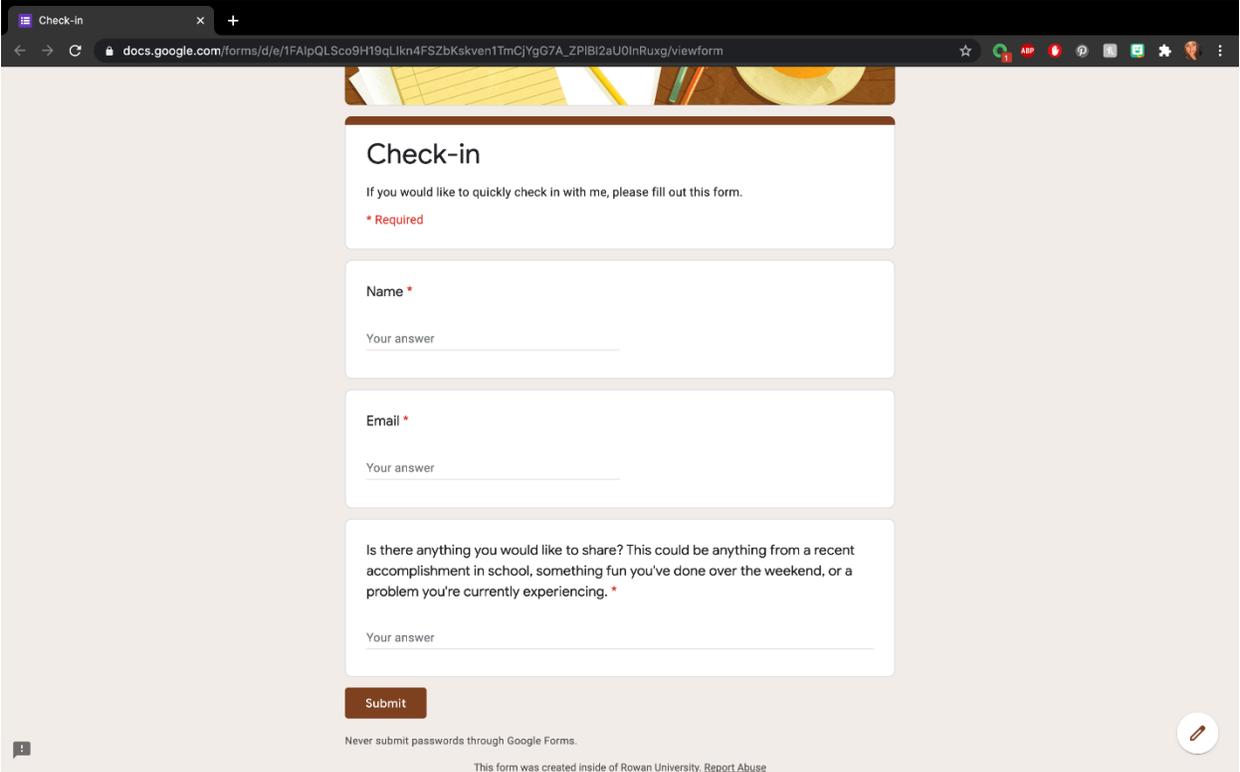


Figure 13.2. The correct screen for the Check-in form.



Figure 14. The “Mindfulness” area of Kimberly’s virtual resource room. Under construction.

Hello, and welcome to the 2020-2021 school year!

My name is Kimberly Gaull and I am a school psychology intern in the Pennsauken School District. I earned my Bachelor of Arts degree in Psychology with a minor in Pre-Health Studies and my Masters degree in School Psychology at Rowan University. I am currently pursuing an Educational Specialist (Ed.S.) degree in School Psychology at Rowan University. You may find me around many of the Pennsauken schools within the district, including Pennsauken High School, Carson Elementary School, and Delair Elementary School.

Please feel free to reach out to me at any time. Your success in school is highly valuable to me and I am here to support you. My email address is kimberly.gaull@pennsauken.net. Thank you, and I'm looking forward to working with everyone and having our best school year yet!

Figure 15.1. The client’s “About Miss Gaull” blurb (English version).

¡Hola! Les doy la bienvenida al nuevo ciclo escolar 2020-2021.

Mi nombre es Kimberly Gaull y soy una pasante de psicología en el distrito escolar de Pennsauken. Recibí mi licenciatura en humanidades de psicología con una asignatura secundaria en estudios de pre-salud. Mi maestría fue en la Universidad de Rowan en psicología. Estoy siguiendo mi educación como especialista en educación en la escuela de psicología en la universidad de Rowan. Me pueden encontrar en muchas de las escuelas dentro el distrito Pennsauken, eso incluye la preparatoria de Pennsauken, la escuela primaria de Carson y la escuela primaria Delair.

Por favor no duden en comunicarse conmigo. El éxito en su trabajo escolar es muy importante para mí y estoy aquí para apoyarlos. Mi correo electrónico es kimberly.gaull@pennsauken.net. Muchas gracias, y espero colaborar con todos en el futuro para tener el mejor ciclo escolar posible.

Figure 15.2. The client’s “About Miss Gaull” blurb (Spanish version).



Figure 16. The arrangement of hyperlinked items on the home page. All the hyperlinked items, save for the transparent email icon, are located inside squares of uniform shape and size, suggesting they are grouped together.

Appendix B

Tables used in this document

Goal: Obtaining the email address of the client.

Task Step	Q1: User knew what to do to achieve the task?	Q2: User noticed that the correct action is available?	Q3: User knew through feedback that they have made an incorrect or correct decision?
1. Click the envelope icon.	No. Chose a different path, instead clicking on the "About Ms. Gaul" element, opening an external Google Document displaying biography information and finally, an email address at the end of the biography.	No. After the task was completed, I explained that there was an email icon on the landing page, but the user was still unable to find the envelope icon.	Yes. When the user clicked on the wrong element, they realized something was wrong because "It was not easy enough. There must be an easier way".

Table 1. Notes from the simple cognitive walkthrough.