

WeKnow

Link to prototype: <https://xd.adobe.com/view/cfda5ec5-cbba-4de7-bdea-f10a6d457a68/>

Link to presentation: <https://spark.adobe.com/page/Qwo4aVxdgL6wg/>

Online Peer Learning Platform for Tweens (8-14)

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This project aims to explore how online peer-learning/collaborative learning environments can foster communication, creativity, critical thinking, and collaboration skills on tweens (8-14).

I. Analysis

1. Problem description

1.1. Background of the problem

According to the last National Common Sense Census on Media Use by Teens and Tweens (2017), children aged 9 to 14 spend an average of 2 hours and 33 minutes daily using digital devices (computer, tablets, smartphones, and iPod Touches). This time is distributed as following:

- Passive consumption: watching TV, reading, or listening to music. Among Tweens this represents 41% of their total daily time spent using digital devices.
- Interactive Consumption: Game playing. Among Tweens this represents 37% of their total daily time spent using digital devices.
- Communication: The study labels social media use as “communication”. Includes use of social media and video-chatting. Among Tweens this represents 14% of their total daily time spent using digital devices.

- Content creation: The study defines “content creation” as writing or creating digital art or music. Among Tweens this represents 5 minutes or 3% of their total daily time spent using digital devices. Content creation is described as more episodic than content consumption. A total of 8 percent of tweens declare that they "often" use media to create content such as writing computer programs, creating or modifying video or computer games, writing, or creating art or music (there are no demographic differences by gender, race/ethnicity, income, or parent education). Many young people also use digital media to help them learn how to “create” content elsewhere in their lives. For example, about half of tweens say they “often” or “sometimes” watch videos about how to “make, build, or do something” they are interested in.

1.2. Problem statement

"Computers may have become extensions of ourselves, but to what extent are we teaching children how to design and manage these extensions?, How do we help children become producers and not just consumers of digital media?" (Kafai & Burke, 2014, pg. 5). Despite the large amounts of time that tweens spend using digital devices, only a small portion of time is devoted to content creation (**Main need: media creation**). Specifically they are spending on content creation an average of just 3 percent or 5 minutes of a total of 2:33 hours that they daily devote to digital devices (Common Sense Education, 2017). Studies have also identified that this number is likely to increase (Lenhardt & Madden, 2005, pg. 3) and a shift toward media creation is expected. The growing availability of digital media-production tools, combined with sites where people can share their creations has promoted a new media ecology that supports everyday media creation and sharing (Lange & Ito, 2007, pg. 244). Among the different kinds of creative work developed within this media ecology, it is possible to find authentic peer-based learning dynamics (Lange & Ito, 2007, pg. 249). Despite the great learning potential of these interactions there is a lack of online environments designed to support peer-learning among kids of this age. Currently children have to share space with adults in online communities that are not designed for their learning needs and safety demands. There is a need for environments that guide the process of creating, sharing and giving feedback so that they can become smart and ethical

digital citizens (*digital literacy need*). Furthermore, there is a need for environments specifically designed to support the full potential of peer-based learning and encourage children to teach and learn from each other (*peer-learning support need*). Finally, there is also a need for safe environments where children can express their unique voices and share their talents and expertises within their framework of knowledge (*age-targeted need*).

1.3. Why is this problem important?

- 1) Children empowerment: Media creation and production lead to children empowerment through the development of self-expression, creativity, agency, and new forms of literacy in a media-saturated era (Lange & Ito, 2007).
- 2) Field rapid growth: The low national average of tween content creation (3%) can obscure the fact that many young people are making extensive use of digital media as tools to create art, apps, music, games, movies, or reports. The national data represents an overall picture of children use outside the school and content creation might be more episodic than other uses. Surveys conducted by the Pew Internet & American Life (Lenhardt & Madden, 2005) indicate a rapid growth in what it describes as online "content creation", particularly among youth. Some 93% of teens use the internet, and more of them than ever are treating it as a venue for social interaction – a place where they can share creations, tell stories, and interact with others. 64% of online teens ages 12-17 have participated in one or more among a wide range of content-creating activities on the internet, up from 57% of online teens in a similar survey at the end of 2004.
- 3) Learning potential: MIT professor Henry Jenkins notes that, along with the rise in popularity of participatory media applications, there has also been a concurrent development of “participatory cultures” that serve to encourage all of this user-contributed content (Jenkins, 2006). Jenkins (2006) defines a participatory culture as “a culture with relatively low barriers to artistic expression and civic engagement, strong support for creating and sharing one’s creations, and some type of informal mentorship whereby what is known by the most experienced is passed along to novices.”

- 4) Adult authority vs youth autonomy tension: Persistent tensions between peer-based learning dynamics and school-based forms of learning. Teachers and adults tend to look down upon children creation, especially when their work appears to be "too polished", particularly those genres with which kids are more familiar than teachers (Buckingham, Fraser, and Sefton-Green 2000, as cited in Lange & Ito, 2007, pg. 249)
 - 5) Educational and entertainment content tension: "Any effort to translate popular and recreational social and cultural forms into educational efforts needs to be informed by youth-centered frames of references" (Lange & Ito, 2007, pg. 249). Because the peer-based online learning environments that youth utilize informally differ in some fundamental, structural ways from the social arrangements that kids find in schools, we need to take into account those social and cultural frames in the design.
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Project Description

WeKnow is a peer-learning online environment for tweens to share videos about their interests, passions, knowledge, and skills. The platform aims to support informal learning (where learners set their goals and standards of achievement) and constructionism (where learners build their understanding in the creation of personally meaningful artifacts). The main purpose of the platform is to engage learners as content creators shifting the identity of tweens from consumers to producers of media. We aim to position children as knowledge experts within their frameworks of knowledge and skills. The project is based on current tweens' socio-cultural dynamics with technology and it is informed on their communities and tools used to share content. Finally WeKnow aims to address the gap on user-driven platforms for tweens by creating a community created by learners for learners.

2. Target Audience

2.1. Learner profile

Upper Elementary and Middle School-aged learners: 8-14 years old. *Tween* is a new word that describes youths who are roughly ages 8-14, who are “between” childhood and the teenage years. The term “tween” is a blend of the words “between” and “teen”. According to previous research these learners are characterized by the following:

According to Piaget’s stages of intellectual development, these learners are going through the end of the stage of concrete operations and the beginning of the stage of formal operations. During the stage of concrete operations, learners acquire skills such as “classification, seriation (ordering), reversal of operations, reciprocity, and identity” (Smith & Ragan, 2005, p. 67). Learners “can think logically but require concrete objects to support this thought process” (Smith & Ragan, 2005, p. 68). During the stage of formal operations, learners can think abstractly and manipulate symbols. They are also able to use variables from abstract problems with multiple propositions and interactions.

Based on Erikson’s stages of psychological development, upper elementary-aged learners can be described with the following stage: *Competence vs. Inferiority*. During middle childhood, these learners have acquired important skills such as reading, writing, and arithmetic, and have also developed fine motor and athletic skills. Children feel competent. However, when they compare themselves to an adult, they may feel inferior in skills, size, and authority. During adolescence, learners are going through the stage of *Identity vs. Identity Confusion*. During this stage, learners are starting to form their own identity as individuals, but this is a period of confusion and exploration. Adolescents are facing the challenge of becoming a unique person and experience confusion about who they are (Smith & Ragan, 2005).

According to Kohlberg’s stages of moral development, upper-elementary and middle school-aged learners are going through the *conventional morality stage*. In this stage, individuals behave morally in order to please or conform to an authority figure (Smith and Ragan, 2005).

These individuals are characterized by the need to comply with one's duty, by adhering to the laws to maintain order.

Based on these three theories that describe the intellectual, psychological, and moral development of individuals, upper-elementary and middle school-aged learners are in a stage of rapid and important development in all areas. They are acquiring new skills and feel the need to become more independent, make their own decisions, and take the initiative. Additionally, they are exploring and building their identity and they feel confusion and doubts. The implication of this for our project is that providing them with the opportunity to showcase and share their talents, interests, and skills may satisfy their need to take the initiative and do things on their own. Positioning learners as experts will empower them and provide them opportunities to enhance their skills. Moreover, our desired platform will allow them to explore their identities and exercise and enhance their new skills. Content creation plays a great deal on identity development and it will reinforce their roles as creators and contributors within a community.

2.2. Learner's use of technology

According to The Common Sense Census: Media use by Tweens and Teens (2015), tweens spend approximately 6 hours daily using media. This time excludes the hours spent using media for school or homework. Tweens from lower-income families have 7 hours of media time a day, whereas tweens from middle-income families (between \$35,000 and \$99,999 a year) spend 6 hours and 31 minutes, and tweens from high-income families spend 4 hours and 52 minutes. Among tweens, there are different profiles of media users: 27% are light users, 23% are Video gamers, 15% are Social Networkers, 14% are Mobile Gamers, and 10% Heavy Viewers. Additionally, there are difference among how girls and boys engage in diverse media uses. Among lower-income families (less than \$35,0000 a year), 71% of tweens have laptops at home. Among higher-income families (\$100,000 a year or more) 89% of tweens have laptops at home. (Common Sense Census, 2015). Moreover, 53% of tweens have their own tablet and 24% of tweens have their own smartphone. Different media activities make up tweens' media diet: 41%

of tweens consume media passively (e.g., listening to music, watching TV or videos, and reading); 37% of tweens participate in interactive consumption activities such as playing games and browsing websites; 14% use media for communication purposes such as using social media and video chats, and only 3% of tweens engage in media production, that could involve making digital art, composing music, writing, and programming (Common Sense Media, 2015).

These data show a real need to support learners as digital citizens and encourage them to become creators rather than only consumers of media. We may also consider the growing access of tweens to digital devices, especially tablets and smartphones as a relevant data for the design and media selection of our platform. Another important information of this census is that has reported that tweens that come from lower-income families spend more hours of using media in general. Hence, we believe that this represents an opportunity to create a thoughtful, engaging, easy-to-use platform that will invite tweens to build and share their knowledge, learn from peers, and foster collaboration skills, while learning to navigate a digital environment responsibly.

3. Learning Context

3.1. Medium: how do tweens access the internet?

With the shift in technology and adaptability of smartphones to engage users through multiple platforms, access has increased for all users to internet, including children. The Pew Research (Lenhardt & Madden, 2005) revealed that 89% of 13-14 year old children have access to a mobile devices. There is also findings from Common Sense Census's report (2015) on Tweens and Teens accessibility to the internet that revealed a glaring shift from 57% tweens accessing the internet with tablets to 63% of teens accessing the internet via a smartphone. Tablet ownership varies between these two age groups. 80% of tweens have access to a tablet where the average user time is more than 2 hours and 30 minutes (Common Sense Census, 2015). This research signifies that mobile devices are the platform of which children most frequent the internet due to the convenience of many of the popular tools being adaptive to mobile platforms first. Additionally, Pew Research (Lenhardt & Madden, 2005) revealed that children's frequency

of access varies with large groups of children utilizing on-the-go access due to the smartphone devices that they have access too. Children are more apt to using their internet access to engage in social media platforms, where they develop identities, as social media offers youth a chance to experiment with different ways of presenting themselves to the world, testing identities outside of the face-to-face context.

These findings provide implications for our design in that this platform can be most effective as a mobile platform on mobile devices, which include tablets and smartphones. This is an environment that these learners are more comfortable with engaging in and have access to.

3.2. Mediated social interactions: how are tweens connected and how do they share?

This age group develop most of their social interactions via social media platforms. Tweens are more likely to share information through the devices that they frequently access which are their mobile devices. Social media accounts show the most prevalence in accessibility to sharing information. According to Common Sense Census's report about Social Media use with Tweens and Teens, 90% of 13 to 17 year olds use some form of social media with 75% of teenagers having a profile account on a social network (Common Sense Census, 2015). These communities that children create via social media are networks that allow them to build digital communities and share information from a range of topics, gaming to pop culture, interconnected with others who share similarities. Social media can also offer youth a chance to experiment with different ways of presenting themselves to the world, testing identities outside of the face-to-face context, which can be difficult for this age group.

This data enhances and further supports our design approach in that WeKnow creates a network for children to share their knowledge with a community of users who share common interests. Furthermore, the platform incorporates a social media-like environment where children can comment and interact with pieces of work curated by other children. Additionally, as mentioned above, tweens utilize their mobile devices to share information through text messaging services.

With the growth and expansion of SMS to MMS, children are able to expressively share images, music, and other media through a text. Youth culture has become adapted to using various social networks and tools of technology that are embedded into their lives. 68% of teens text everyday, also, 19% of children utilize an IM to communicate and share information, and 17% of children engage in discussion boards. The shift in media and communication is also impacting the values and norms of education, literacy, and public participation and this can be leveraged for WeKnow as it will incorporate a comment feature engaging learners to participate actively and remix other's videos and developing norms around media literacy and education.

3.3. Media use: what do they use media for?

There are substantial variations in the type of media-related activities that children engage in and how they use devices. This age group's interactions with tablets and most prominent use while on these devices is primarily playing games and watching online videos (Common Sense Census, 2015, p. 57). Common Sense Census described content creation as writing or creating digital art or music. Among Tweens represents a 0:05 hours or 3% of their total daily time spent using digital devices. Content creation is described as more episodic than content consumption. A total of 8 percent of tweens declare that they "often" use media to create content such as writing computer programs, creating or modifying video or computer games, writing, or creating art or music (there are no demographic differences by gender, race/ethnicity, income, or parent education).

These findings of the types of application that our target audience engages in, video gaming and online video watching, their most prevalent media user profiles, and the results of the number of users who fall under content creation can inform our design by supporting our medium of online video creation and serves as addressing the disparaging number of children who are passively consuming and not creating content.

3.4. Learning culture and interest: what are tweens interested in learning?

Vygotsky's sociocultural theory (1997) of human learning seems to be a consistent theme that is present in the findings about tweens learning culture and interest. This age group fosters social interactions with the aided use of tools accessed on their mobile devices. The idea of learning as a social process centralizes social interaction as a primary component of learning. Furthermore, Common Sense Media Case Studies explored youth interaction with media revealed that much of their engagement and selection of media is reflective of student interest and values (Common Sense Census, 2015, pg 7). All of these features, user media profiles, identity, interest, and values, impact how children engage with the media they consume. Many young people use digital media to help them learn how to "create" content elsewhere in their lives. For example, about half of all teens (47 percent) and tweens (50 percent) say they "often" or "sometimes" watch videos about how to "make, build, or do something" they are interested in.

Vygotsky's sociocultural theory has major implications on our design approach to develop spaces in this platform that naturally nurture children's interest and media values.

3.5. Social support: how do parents and peers support internet use?

Modeling and generational media practices are developed through parental practice and use of media. Parental support and media practice is reflective towards the child's use of media as well as the living situation and environment that they are situated in. According to Common Sense Media's report (Common Sense Census, 2016) parents who practice consistently with a certain type of media are more likely to model that for children (p. 7). For instance, parents who have less technical expertise view media usage and practices differently and monitor children's usage more heavily, whereas children who live in households with multiple access points to technology have a higher rate of being encouraged to use technology in a variety of ways beyond social practices, but also for learning, where 94% of parents think technology positively supports their children in school work and education.

This can be used for implications of the design process because the target audience of tweens are currently in the conventional morality stage (Reiser & Dempsey, 2017) where individuals behave morally in order to please or conform to an authority figure, thus their modeled behavior is reflective of their parent's practices. Extending this modeling approach requires an understanding of parental monitoring practices as well: 85% of parents believe monitoring children's media use is important to their children's safety. 13 years is the age set by Congress in the Children's Online Privacy Protection Act (COPPA), which prohibits websites from collecting information on children younger than 13 years without parental permission (O'Keeffe & Clarke-Pearson, 2011). This reveals that monitoring is a result of the parents concern for safety when a child is engaging in a technology tool, and these results can be used to incorporate safety measures in WeKnow that ensure the privacy of children and developing an environment that is only for the targeted audience and requires approval of parents to engage with. These extra security measures are important to grounding credibility with parents.

3.6 Technical: what technological skills do they have?

A tablet with high-speed internet connection and microphone, speakers, and camera access will be required to efficiently engage in media creation in the WeKnow platform.

Interacting on social media sites can help develop communication skills, a sense of community, and technical skills, according to the American Academy of Pediatrics (O'Keeffe & Clarke-Pearson, 2011). Most children engage with media through screen media which reveals that children are able to develop perceptive technical skills and acquire knowledge through visuals.

The platform WeKnow will incorporate video in a format where the children will have a chance to "teach" or "share" their knowledge where they will have a platform to literally have a voice and develop public speaking skills. These skills are nurtured and evident in the video creation which is a core component of WeKnow. Public speaking skills are a challenge for students in this age group who struggle with acceptance and developing their identity. Additionally, the well

structured problem of content creation addresses technical skills of product testing, problem solving, design skills, and animation through the various ways in which through merging media, video, images, filters, stickers, and other tools to portray a concept that learners would like to share. All of these practices are currently embedded into youth culture through their practices on social media and gaming, where they create avatars, share information, and manipulate images with filters and overlays of text changing the meaning of messages and presenting perspectives.

4. Theoretical Background

4.1. Learning theories

a) Constructivist Learning Theory: Learning in WeKnow can be framed from a constructivist theoretical perspective in that it aims for learners to build the understanding of the ideas embedded in the creation of personally meaningful representations of their knowledge. Constructionist learning experiences are based on the premise that constructing external physical artifacts can facilitate knowledge construction (Papert, 1993; Wilkerson-Jerde, Wagh & Wilensky, 2015). "The argument is that by constructing such artifact, using primitive rules that connect to the learner's existing ways of navigating the world, learners' prior knowledge can be reorganized, debugged, and built upon to generate new ideas" (Wilkerson-Jerde et al., 2015). This way, WeKnow provide a space for kids to create representations of their understanding of a topic of interest in the form of videos. From a constructivist view, learning is expected to occur through the creation of this piece which require children to organize, self-evaluate, de-bug, and build a representation of their own understanding of the topic that they want to share. This learning process will be potentiated because of the children's intrinsic motivation for the selected topic which is manifested in the desire to share it.

b) Metacognition: metacognition is commonly defined as the ability to understand and monitor one's own thoughts and the assumptions and implications of one's activities (Favell, 1987).

Similarly, Brown (as cited in Lee & Baylor, 2006) depicts metacognition as awareness and control or regulation about cognition and learning process. Many studies have focused on providing support for metacognition because it has been proven that despite the learning benefits of metacognition, people do not spontaneously engage in metacognitive thinking unless they are explicitly encouraged to do so (Lin, 2001; Bannert & Mengelkamp, 2013). WeKnow could provide the means for users to engage in metacognitive thinking without directly prompt or ask for it. For children to create a visual representation of their knowledge of a certain topic they will need to organize their thoughts to present them in an understandable way. This process may encourage critical thinking about their own thinking process, self-evaluating their conceptions, and debugging possible flaws of their understanding. Furthermore, once published children may receive comments about their videos which may provide further opportunities for reflection.

c) Social Distributed Intelligence: According to Pea (1993), the social distribution of intelligence occurs in joint action activities such as guided participation, apprenticeship, or through people's collaborative efforts to achieve shared aims. Tools can serve as means of distributed intelligence, by providing new opportunities for contributing to an activity defined by a community of users (Pea, 1993). WeKnow is thought as a technological tool to support social distributed intelligence as it provides the means for children to contribute in the creation of shared knowledge about different topics.

4.2. Learning frameworks

a) Peer-based learning: The main instructional strategy that it is going to be used is peer-based learning. Peer based learning refers to students learning with and from each other as fellow learners without any implied authority to any individual. This strategy is based on the idea that “students learn a great deal by explaining their ideas to others and by participating in activities in which they can learn from their peers” (Boud, 2001) Explaining one’s ideas is important for productive collaboration and serves to enhance learning (Webb and Palincsar, 1996 as cited in Hmelo-Silver, 2004). Cognitively, peer learning involves “support and scaffolding from a more

competent other” (Topping, 2005, p. 637) which in this platform competency is varied throughout the network, as learners are positioned as experts of various domains of knowledge. The video production, which is the crux of WeKnow, allows learners to create scaffolds of learning for their viewers who will learn from the knowledge they share. Furthermore, the video is the representation of knowledge for the learner which also an example of “cognitive model of competent performance” (Topping, 2005, p. 637). Moreover, the helper (sharer of knowledge) is supported by the helped (viewer) gives feedback to each other explicitly in this platform through the feedback cycle. Peer-learning informs our design process as it “increases the quantity and immediacy of feedback to the learner” (Topping, 2005, p. 638) and will be increased even more so through the platform’s embedded feedback prompts and scaffolding. Based on these premises, WeKnow is going to provide unique opportunities for kids to learn from each other.

b) Informal Learning: This platform will mirror the process of informal learning, where learners are encouraged to “set their own learning objectives and determine for themselves what successful completion looks like” (Reiser & Dempsey, 2014, p. 142). This theoretical framework informs our design process as learners are positioned as the experts of their knowledge in an environment where they share knowledge based on their own representation of the knowledge they choose to share. This ability to select what knowledge and topic of knowledge they are sharing is directly aligned to the definition of informal learning. Additionally, the feedback cycle that engages learners in learning how to give and respond to feedback is reflective of the definition in that learners determine what is success through this platform through responding and engaging in feedback. In regards to ensure that learners have some level of consciousness about the process of learning, “the extent to which the learner is aware of that learning has occurred” (Reiser & Dempsey, 2014, p. 142), will be aided through features in the platform that prompt metacognitive skills such as critical thinking or the process of feedback. Thus, some elements of formal learning are evident however, the environment is designed to be an informal learning space that cultivates learning “organically within the context of [the learners] everyday lives” (Reiser & Dempsey, 2014, p. 142). Additionally, the multimodality options that learners can chose to represent their knowledge is the process of “content or documentation” as well as the

type of content which will primarily be “tutorials” which are examples of informal learning. Furthermore, informal learning informs our design framework because informal learning is a social activity and WeKnow is a community of learners who are positioned as experts of their domain of knowledge. This community fosters social interaction through the feedback cycle as well as the viewing feature of videos which aid in “speed [learners’] development by helping them learn from other [learners’] experiences”(Reiser & Dempsey, 2014, p. 146). More specifically, our design supports informal learning through the “development of templates to publish content, [such as] fill in the blank forms that prompt people when writing and producing content” (Reiser & Dempsey, 2014, p. 148). An example of this is through the video creation tool, where the learner is presented with guided question prompts for each frame that they are creating to represent their knowledge as well as the feedback cycle, which prompts users to utilize the fill in the blank prompts to give constructive feedback and respond to feedback. These two features were adapted through the instructional design support systems to ensure informal learning is transferred through a more conscious effort to make the user aware of what they are learning and skills they are adopting.

5. Learning Goal and Objectives

4.1. Learning goal:

The learning goal of the platform has three main components:

- 1) Learners will be able to *create* multimodal representations of their chosen knowledge (factual, conceptual, procedural, or metacognitive). This implies that learners will put different elements together to form a novel, coherent and original new product to showcase their knowledge.
- 2) Learners will enhance an *expert attitude* toward their knowledge and interest. This implies that learners will share their knowledge using convincing presentation structures to explain and describe their knowledge and the importance of their ideas.

- 3) Learners will be able to *understand* others' multimodal representations of knowledge.
This means that learners will be able to determine the meaning of instructional messages from other participants including oral, written, and graphic communication.
- 4) Learners will be able to *evaluate* others' multimodal representations of knowledge. This implies that learners will be able to give constructive feedback and make judgements to evaluate theirs and others' representations of knowledge based on personal criteria.

The described learning goals will address the learning problems presented in the first part of the document. The first learning goal, creation of representations of knowledge, aims to address the main problem that the project is targeting; the engagement of children as creators more than as consumers of media. The second learning goal, the enhancement of expert attitude, targets the problem of digital literacy by scaffolding the presentation skills to become positive digital literacy. The third and fourth learning goals, understanding and evaluating others' representations of knowledge, intends to solve the need for specifically tween-targeted learning environments for peer learning. Finally, the need to provide guidance on digital literacy is going to be further covered throughout the learning goals by providing guidance and scaffolding on how to create, share, and give feedback in positive and meaningful way.

4.2. Knowledge dimensions that will be supported:

Students will choose the type of knowledge to represent, for instance:

- Factual: Ex.: The capitals of the World, Car brands, Dinosaurs, The Solar System.
- Conceptual: Ex.: Electricity, Robotics, the Water Cycle, Civic participation.
- Procedural: Ex.: Baking chocolate cupcakes, playing video games, make-up, dance tutorials, lego construction.
- Metacognitive: Ex.: Study habits and techniques, meditation.

4.3. Information-processing analysis of the learning goal:

For our first and main goal (Learners will be able to create multimodal representations of their chosen knowledge) the information processing will be:

- 1) Create an account in the platform
 - 2) Read and accept terms and conditions
 - 3) Select a knowledge domain where the learner feels confident
 - 4) Evaluate his/her own knowledge of the domain
 - 5) Analyze the knowledge domain to determine its constituent parts and scope
 - 6) Determine the scope of the representation
 - 7) Organize the knowledge domain in a coherent sequence for presenting:
 - a) Select title
 - b) Introduce the creator
 - c) Introduce the idea/perspective/expertise/procedure/story
 - d) Explain its relevance to you and others
 - e) Describe and explain the idea/perspective/expertise/procedure/story
 - f) Engage other friends and Conclude
 - 8) Plan the execution of the multimodal representation (ex.: video, audio, image, text)
 - 9) Locate available digital tools to generate multimodal representations
 - 10) Produce the multimodal representation using available digital tools
 - 11) Revise and evaluate his/her own representation of knowledge
 - 12) Locate publishing features within the platform
 - 13) Follow publishing instructions
 - 14) Publish the multimodal representation
 - 15) Manage sharing settings
 - 16) Revising feedback from user
 - 17) Responding to other users' feedback and giving feedback to other creators.
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6. Review of Existing Projects

6.1. What can you learn from existing projects?

During our research we were able to find similar projects that align to our goals and even some of the features that we are considering for our project. You can find our market research in the following figure below:

App/Website	Target Audience Grade Level	Purpose	Skills/ Knowledge	Features	Environment
Shadow Puppet Edu	2-12	Project creation tool that allows students to work with content from various sources as well as project created ideas. Created for use in the classroom and aligned to Common Core standards	Content creation Project management Digital storytelling Information gathering	Text images and video creation Sharing easy with exporting to multiple platforms Content sources embedded Narration Background music Automatic saving Wide content library Can view other's videos	In Class
Screencastify	3-12	Browser extension that allows screen recording of content and material to share and save locally on a cloud drive. Aids in interactivity as you can or record activity .	Content creation Public speaking Video editing re-Production quality	Narration Screen recording Cloud drive saving Directly draw on the screen or highlight text on the screen in your recording Producing content is accessible Sharing content is difficult and only done through link	In Class
WeVideo	4-12	Easy to use interface, this video creation tool aids in creating videos collaboratively in a cloud based space for easy access and reproduction. With three modes it	Content Creation Collaboration Creativity Information gathering Digital storytelling Knowledge gathering	Presentation style options Collaborative functions to work on project simultaneously Skill is not a challenge with the personalization with skill levels Voice over text	In Class Or Out of Class

		customizes your creativity based on your experience		Upload images Pre-made themes	
FlipGrid	6-12	Interactive platform that allows video creation as a means of discussing topics in a private community led by educators. Social learning network that utilizes feedback cycles and forums to create knowledge sharing. Student centered that brings in student context and interest on the topics	Public speaking Interactivity Engagement Student advocacy Student agency Knowledge gathering	Student to student interaction Student to teacher interaction Easy to use recorder Content creation link outsourced media to their responses to topics Community portfolio Formative Assessments empowered by rubrics	In-classroom
AdobeSpark	8 and up	Users can create posts, pages, and videos using video, image, text and sound. The platform guides the user through the creation of artifacts for different purposes. By adding video, text, and image, learners can record audio on top of each frame to narrate a story or share a message.	Content creation Graphic design Digital storytelling Project presentation Information gathering.	Multiple templates available; prompts included to scaffold the creation process. Several audio files are available to add to the videos, as well as themes and layouts to design each frame. Icon and free photos search engine to add to the videos. Videos can be downloaded or shared in the platform and classified through different categories. Users can create a link to share the video.	Out of classroom

Some of the major trends that can be concluded from this market research are that student agency and voice are critical components of a student centered approach with media creation. All of the applications leveraged the idea of student agency by creating a learning environment where

students can use their perspectives and prior knowledge to share their experiences or connection to the content. Additionally, they all encourage knowledge sharing through creating communities of learners, for example, both FlipGrid and Shadow Puppet make it intuitive and easy to share the content in either an export fashion or on the actual shared platform of the community. This informs our design in that student-centered learning starts with creating a platform where students' voices/agency are at the forefront of our design.

Developing a space where students are leading with their knowledge and experiences is more engaging and impactful as seen by the aforementioned trends. Not all of the tools researched leveraged the affordance of digital social learning environments and peer learning. WeVideo encourages and supports collaborative work by allowing children to simultaneously work on a project, but doesn't have a platform that is informed by social learning environments and instead the teacher would have to share the link externally and individually. One of our learning objectives is to encourage peer learning and collaborative and creative work, thus this trend informs our design to consider how to streamline the efficiency of collaboratively working on a media piece. One of the major trends for all four products that were researched for the market research was that all of these tools were designed to function in the classroom or as an extension or supplement to the classroom. Flipgrid even creates an assessment piece tailored to creating rubrics for formative assessment, and WeVideo and Shadow Puppet Edu, are both referenced in Common Sense Media Video Tool Reviews, as "great tools for formative assessment", "tools to creatively share what students have learned", and "innovative tools for assessment". WeKnow, will contrast with this ideology of assessment based video/content creation as this tool is purposed to be used outside of school and hones in on student interest. This informs our design process for two reasons, we are not leveraging an alignment to standards or assessment to alleviate the pressures that come with aligning student tools and innovation for students to critically think and authentically create content that is driven by their interest and motivates them to engage with a network of learners. None of the tools researched were 100% student driven, as all of the tools required some teacher prompting of the topic, context, or shaping of how to use the tool in the classroom setting. WeKnow, will be framed by students' goals, motivations, and

interest with adopted features such as forums, collaboration, pre-themed templates, and cloud based sharing. These features were most prominent and most featured on all four of the tools and highlight the importance of usability for the target audience in getting them engaged in the social learning environment.

6.2. Why do you need a new learning environment?

From our market research we did not find one learning environment that critically spoke to student-centered learning that is both designed and delivered by students. There were pockets of learning environments that could use this as a leveraging tool but none that focused directly on the target audience and the content designed on an age appropriate level.

Youtube, has an increase in users creating spaces for informal learning, via DIY videos, but it is not targeted for a Tween audience so they can be easily exposed to adult-oriented content and advertising. Furthermore, Youtube's terms of service (Knorr, 2017) indicates that in order to have an account users have to be older than 13 years old so the increasing number of tweens is a sign of their demand for an space. On the other hand, the environment of WeKnow is going to be learning-oriented and supports collaboration, feedback cycles, and shared knowledge. There are tenants of this in our market research but no learning environments that intuitively leverage these skill sets as end goals or means to an end.

Additionally, the learning environment that surrounded most of the tools researched above were primarily focused on in-classroom supplemental tools and resources, whereas WeKnow is focused on learning outside of the classroom that is influenced by the student's interests, strengths, cultural practices, and may not directly align to specific content standards and skills like most of the tools listed above. To extend the topic of aligned standards and assessment, this presents anxieties around formal learning, which categorizes many of the learning environments listed above, whereas WeKnow contrasts as an informal learning environment without the anxiety behind assessment and content alignment. This is important to our design because it allows for more creativity and innovation from students that is not directly aligned to content.

The possible setbacks for this could possibly be how to address the evidence of knowledge, which is addressed in the ability to remix media as well as interact with other users by giving them feedback. The informal learning environment makes learning 100% student-centered and student-driven under a social learning environment that supports students creativity and knowledge sharing regardless of knowledge level or deficiencies and can be used without the prompting of a classroom topic or teacher.

This platform is different from existing tools because it is especially designed to support tweens in the creation and sharing of their knowledge. Learners will share their original videos and through guided scaffolding, they will be encouraged to provide feedback to other peers, and respond to others' feedback and constructive assessments in order to improve their creations. This combines the affordances of easy video editing and creation tools such as AdobeSpark or Shadow Puppet EDU with the publishing and sharing features of communities such as Youtube. Moreover, this platform is unique because it will allow children under the age of 13 to safely own and manage their profiles, while keeping their information safe. Prompts will support children as they become smart digital citizens and learn about the importance of protecting their information, assuring their safety, and making safe and ethical decisions online. Creating an account on WeKnow will not require an email and it will be protected by the user's birth information (which will remain private) and security questions that will include text and graphic features. Not requiring an email will promote accessibility to more children and will make the sign-up and login processes easier.

“Most YouTube kids also are multi-platform, cultivating audiences on Instagram, Snapchat, and Twitter and even writing books” (Knorr, 2017). Hence, learners that already use other platforms could be interested in creating an account on WeKnow and take advantage of the affordances of the platform. Furthermore, learners with fewer skills with sophisticated video editing tools or softwares will be able to create and edit videos easily on the platform.

II. Design

7. Content Analysis

7.1. Description of the Content

This learning platform will encourage students to create and communicate different types of knowledge (factual, conceptual, procedural, or metacognitive). Learners will have the opportunity to get inspired by watching other users' videos and the prompts will help them select and organize the content they will present. Furthermore, the content that learners will acquire through the use of this platform is related to planning, organizing, sequencing, and presenting knowledge through multimodal resources (audio, video, image, text). The learners will learn to navigate the platform effectively through the prompts and scaffolds provided, create and publish their production, receive feedback, respond to feedback, and offer feedback to other learners' projects. Future versions will include the possibility of collaboration among several learners or remixing existing projects. When selecting the content to present through their multimodal representation, learners will be given categories or labels to organize their thinking. Learners will be guided through the process of effectively and creatively communicating their knowledge. In order to create their videos, learners will consider these guiding questions or scaffolds and complete each slide or video frame before continuing to the next part:

1. Tell us about what you are sharing today (You can change it later) (This space will be limited to one line).
2. About me (Consider these questions to guide your introduction)
 - a. What is your name?
 - b. Share what makes you YOU.
3. What are you sharing/showing today?
 - a. Tell us about your idea/position/problem
4. Why is it important/Why do you want to share it?
 - a. Why does this issue matter to you and your friends?
 - b. What do you want your friends to learn from this?

5. Show your knowledge
 - a. Explain your idea/process/opinion
 - b. If it is a process or step-by-step, what materials are needed? How much time is required?
 - c. If you are sharing an opinion or position, be persuasive, and give good reasons and examples.
 - d. If you are showing something you created, perform your piece/share your creation.
 6. Engage your friends
 - a. Share resources to help your friends continue learning about this (links, games, websites, books)
 - b. Ask questions to your friends
 - c. Invite your friends to comment
 - d. Show gratitude!
 - i. Thank your friends for watching
 - ii. Say goodbye!
-

8. Media selection

8.1. Description of the media

The media selected for this project includes multimedia, new media, the Internet and its affordances: combining video, audio, text, and image to create and communicate knowledge and sharing it with larger audiences. The final product will be a video. Moreover, the connectivity capabilities of the Internet will allow learners to collaborate with other learners. Also, features of social media will be present through comments, responses, and feedback.

8.2. Why was the media/medium selected?

These media have been selected because research has shown that these devices and modalities are preferred by tweens. 89% of 13-14 year old children have access to a mobile devices. Additionally, there has been shift from 57% tweens accessing the internet with tablets to 63% of teens accessing the internet via a smartphone (Common Sense Census, 2015). This online platform will be especially designed for tweens, so the platform will be designed considering the characteristics of the mobile devices they more frequently use. Moreover, learners will combine video, audio, text, and image in their creations. These powerful modalities will allow students to develop creative projects and convey a clear message of their knowledge.

8.3. Description of the delivery platform

The platform will be delivered through an application designed for tablets. Research has shown that tweens have more frequent access to tablets than computers and use more efficiently mobile devices with touch screens rather than keyboards and trackpads or mouses (Common Sense Census, 2015). However, a browser-based platform will be developed to complement and have access to larger audiences in future versions.

Tablets will allow more functionality visually and support the features of gallery. The larger size and resolution will help learners navigate the platform, edit, and create videos with a drag-and-drop functionality. Additionally, tablets allow for the functionality of screencasting, which will be a feature of the final prototype, where students who use web applications and games are through the device of tablets which needs for a wider screen. The input feature for customization with the intended design will be more effective through a tablet as the platform has several content elements that are better visually represented on a wider screen.

9. Project Description

9.1. Description of overall functionality (major components & features)

WeKnow is a peer-learning online platform for tweens to be able to create, share, and see video representations of their expertise in order to support development of the competencies to *create* multimodal representations of their chosen knowledge (factual, conceptual, procedural, or metacognitive), *understand* others' multimodal representations of knowledge, and *evaluate* others' multimodal representations of knowledge. The platform will have the following main features to support this process:

- Gallery: video representations of children expertise are going to be displayed in a gallery. (Learners will be motivated by the featured project opportunity. Featured videos are populated by users who create several videos and engage in the community through the feedback cycle. These videos will populate with a star next to them to signify that it is a featured video. Featured videos are calculated based on the cycles of feedback generated by the video. Students will not be featured based on the validity and accuracy of the content as this community encourages knowledge sharing from a cosmopolitanism perspective. Learners will either browse and watch videos published by other creators, using a search engine within the platform to sort the videos by categories: Arts and Crafts, Science, Technology, Culture, Nature, etc. This part of the platform that will be accessible without having an account.

- Create: children will be able to create videos using the platform. They will be able to record audio and videos in the platform by allowing access to the camera and the microphone of the device. For special categories that may require screencasting, the camera button, once selected, will allow screencasting to be displayed with the following two options: Screencasting or Screencasting with video commentary. This impacts our design process as some users will want to record their screens for the purpose of video game tutorials, web application tutorials, or other web based tools that are better visually represented through screencasting. The platform will

provide basic editing tools to cut, paste, decorate with stickers and icons, and write on top of the videos. This will allow the learners to highlight important aspects of their representations using arrows, images or texts.

Learners will follow a series of prompts or scaffolds to guide the process of creating their videos. They will follow 6 steps that will translate into 5 slides in order to complete the representation of their knowledge:

7. Tell us about what you are sharing today (You can change it later) (This space will be limited to one line).
8. About me (Consider these questions to guide your introduction)
 - a. What is your name?
 - b. Share what makes you YOU
9. What are you sharing/showing today?
 - a. Tell us about your idea/opinion/skill/thing
10. Why is it important/Why do you want to share it?
 - a. Why does this matter to you and your friends?
 - b. What do you want your friends to learn from this?
11. Show your knowledge
 - a. Explain your idea/process/opinion
 - b. If it is a process or step-by-step, what materials are needed?
 - c. If you are sharing an opinion or position, be persuasive, and give good reasons and examples
 - d. Perform your piece/ Share your creation
12. Engage your friends
 - a. Share resources to help your friends continue learning about this (links, games, websites, books)
 - b. Ask questions to your friends
 - c. Invite your friends to comment
 - d. Show gratitude!
 - i. Thank your friends for watching

ii. Say goodbye!

Learners will use a drag-and-drop feature to combine video, image, audio, and text in sequence in order to create their video. Users can choose to upload images from their devices or take them from the platform. Children can choose to take a picture with the device's camera or a screenshot. Videos and audios will be recorded internally for every slide. The video feature will allow screencasting. After the learner completes each slide, an arrow will allow them to continue working on the next part of the video. After completing the 7 prompts, learners will be able to review and modify any slide.

- Feedback and Responses: children will be able to comment each other's videos after creating an account. Commenting others' videos and responding to feedback will demonstrate that learners understand others' representations of knowledge, and reflect on their work in order to improve it based on feedback and interaction with other users. The process of giving feedback will be supported with prompts to encourage kind, constructive, and meaningful comments. The feedback/comment feature will provide prompts to guide the sharing of meaningful and constructive criticism:

1. My favorite part was _____ because _____
_____.
2. You helped me better understand _____
_____.
3. What do you mean by: _____?
4. You did a good job explaining _____, but I think you can
improve by _____.
5. Why did you: _____?
6. I challenge you to: _____.
7. You inspired me to _____
_____.
8. I want to know more about: _____
_____.

Creators of the video will be notified when they receive comments and will be able to respond to these comments, as well. Preset feedback options will allow the user to be informed and review the feedback. The user will then have the option to respond to feedback comments with preset feedback sentence stems at their own leisure. The creators of the video will have the opportunity to review and edit their videos based on the comments and feedback received. New versions of the videos can be published and these new videos will indicate the version number next to the title. The users that commented on the video will be notified when the creator responds to their comments and if a newer version of the video is published too.

Learners will respond to feedback with guiding statements:

1. Thank you for pointing out _____
_____.

2. I'm glad you understood _____.
Check this: _____.

3. To learn more about _____ you should: _____
_____.

- Share: children will be able to share their videos within the platform. There will be a share button that will prompt the video to be published to the WeKnow community after reviewing their work. Shared videos will appear in the gallery organized through categories: 1. Arts and Crafts; 2. Technology; 3. Culture; 4. Sports and Hobbies; 5. Science; 6. Games, and 7. Nature. When creating their videos, learners will choose from a list of existing categories and labels that they believe are descriptive of their creations, but can additionally add more specific keywords using hashtags before publishing their creation to help other peers find their videos. Additionally, creators will be able to share a link of their own videos or other users' videos.

- Remix: the possibility to reuse and remix each other's videos will be supported in future versions of the platform in order to foment shared knowledge. Learners will be able to select a clip from another user's video and add it to their collection in order to use it later in a new video creation.

- Privacy policy considerations:

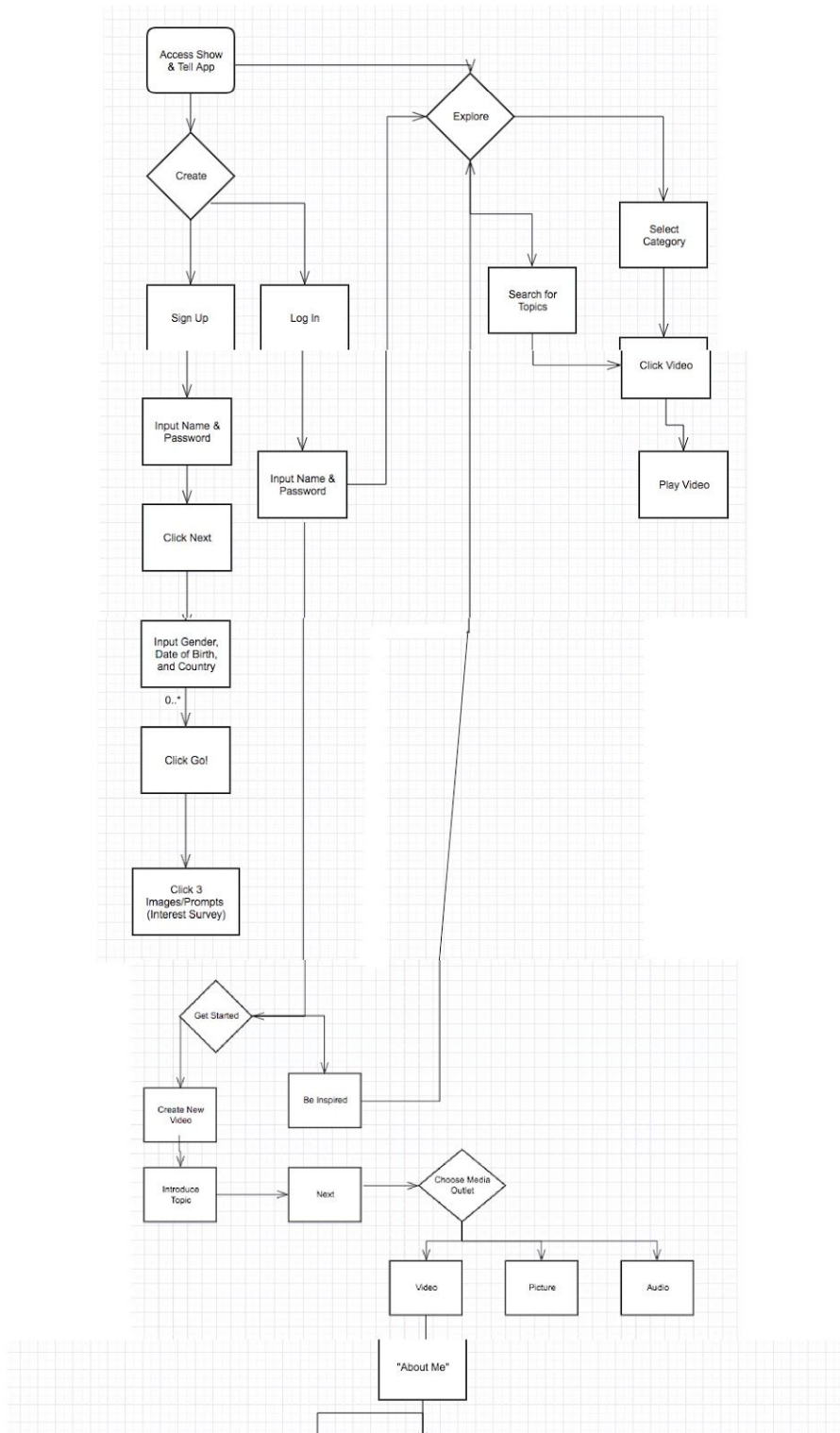
To protect children's online privacy, we limit what we collect during the signup process, and what we make public on the website (Scratch, 2016) (We will not sell or rent account information to anyone):

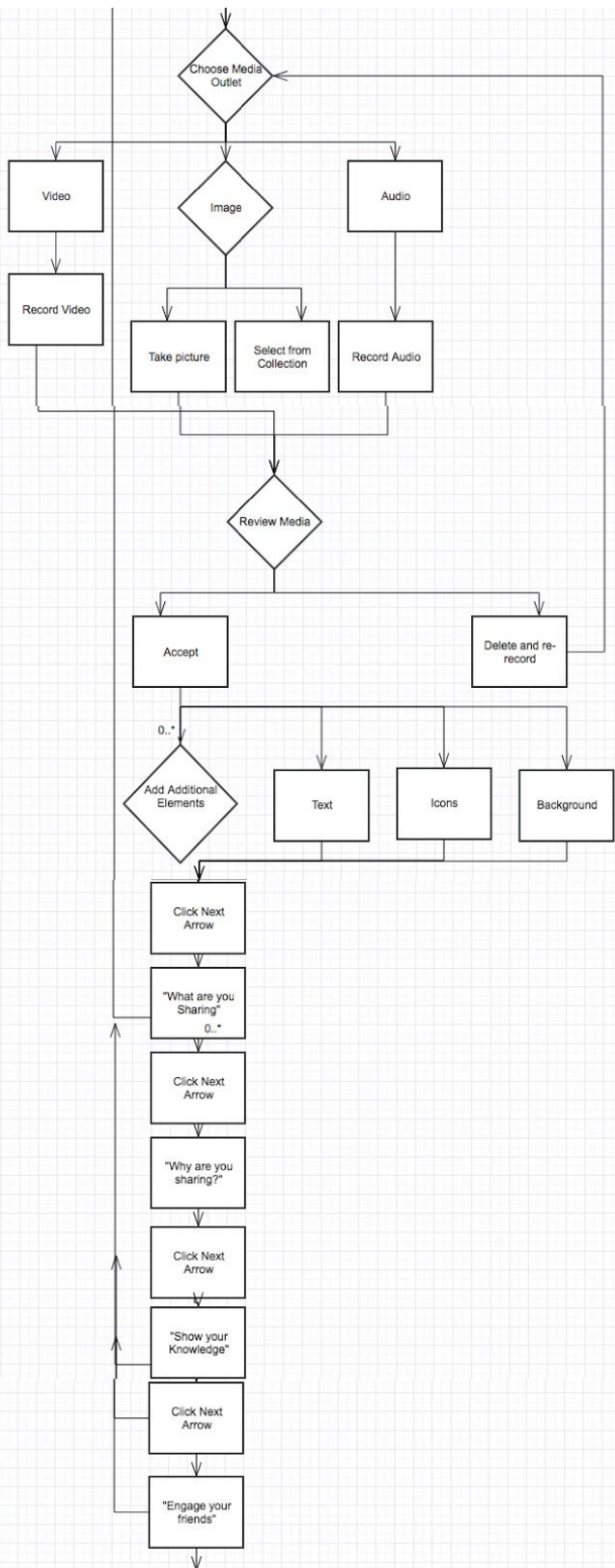
1. *Username and password*: We ask users to select a username and a strong password.
 - a. Make your passwords eight or more characters, using combinations of letters, numbers, and symbols. (These are harder to crack than regular words because there are more combinations to try.)
 - b. Don't include any private-identity information in your password. (People may easily guess passwords that include your name, address, birth date, and so on.)
 - c. Change your password at least every six months. (This way, even if someone does guess your password, they won't be able to get into your account for long.)
 - d. Don't share your password with your friends. (Even if you trust them, they might unintentionally do something that puts you or your information at risk) (Common Sense Census, 2017).
2. *Country*: We suggest you only inform the country where you live. Do not give more specific information on the videos you create or on the feedback you provide.
3. *Birth month and year*: We use this to confirm ownership of the account if the owner loses the password and username or asks to close an account. This information will remain private (Scratch, 2016).
4. *Gender*: masculine, feminine, other (blank space). This information will remain private.
5. *Parental permission*: if users are under 13 years old, parents will be asked to approve the child's creation of the account and sharing of information (which will only be used in case the owner loses password or username).
6. *Security questions*: Since email will not be required to use the platform, security questions will protect the learner's account and can be used if the owner loses the password and username or asks to close an account.

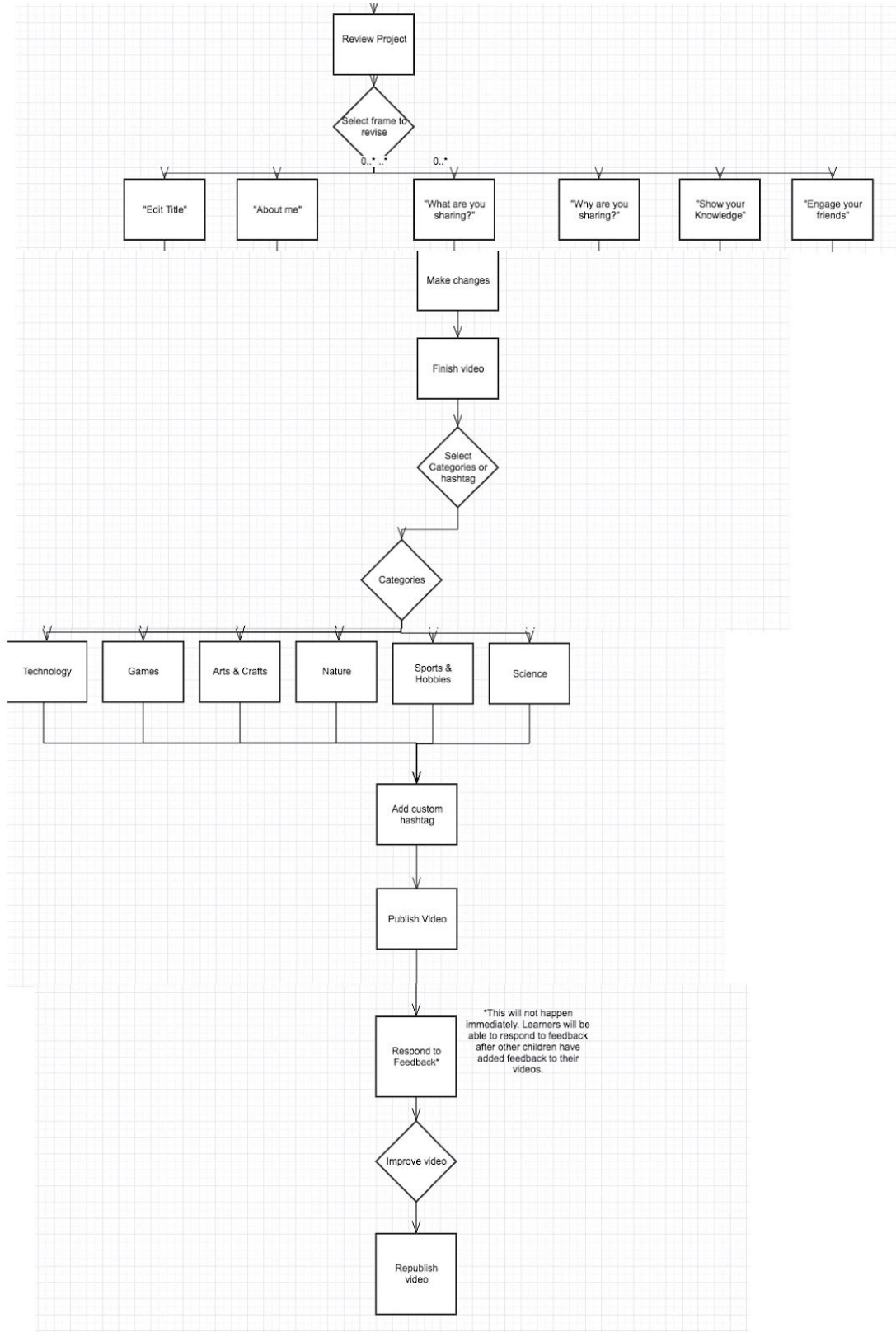
These privacy features will support children achieve the learning goals of the platform safely: create representations of their knowledge, evaluate and reflect on their own and others' creations, understand other's videos, and position themselves as creators of knowledge.

10. Information Architecture

10.1. Flow-chart of overall project







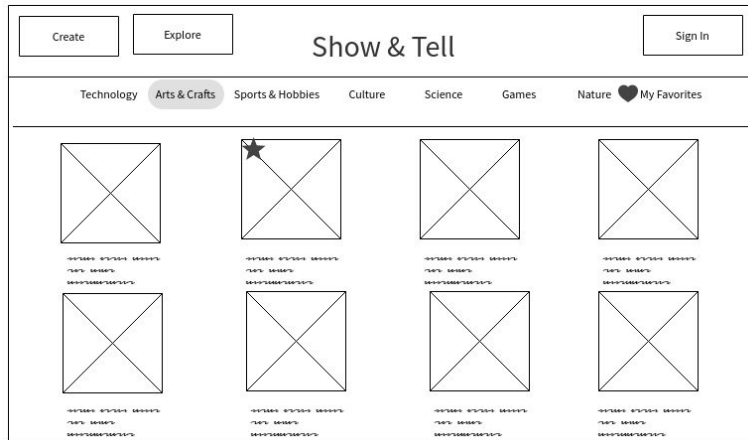
10.2. Information Design:

The content presented through the platform will allow learners to coherently and creatively represent and communicate knowledge. A series of scaffolds will encourage learners to select, organize, and synthesize information to create a novel and original multimodal representation of knowledge. This content will allow the learners to accomplish the learning goal of creating multimodal representations of their chosen knowledge (factual, conceptual, procedural, or metacognitive).

Moreover, the platform will provide scaffolds for learners to collaborate with other children and give meaningful, constructive feedback to their projects. This content will allow the learners to understand and reflect on the ideas presented by other users, and evaluate their own and others' multimodal representations of knowledge. Following a series of statement starters, learners will be able to give feedback to other creators and respond to feedback on their own creations. Learners will be encouraged to revise, improve, and re-publish their creations.

10.3. Interaction Design:

Throughout the platform, users will be able to engage in 4 main actions: create video, watch videos from the gallery, add feedback to other users' creations, and respond to feedback on their own videos. The user will complete a cycle of interacting with the platform that will ultimately create a community of practice that flows through a cyclical process that can be entered from any point of the cycle. The learners will create authentic learning and interaction with other users through the platform as it scaffolds this interaction even through the scaffolded steps of creating a video, such as the frame where users have to create an engagement frame where they send a call to action to the viewers to engage with their video. This moves beyond the passivity of social communities and makes interactivity in this platform as an affordance with the design structures. One of the affordances of the design structures that will be implemented is the Reply feature that scaffolds feedback prompts for the viewer and the responder through a dropdown function and input function. The following images outline both the Interaction Design and the Information Design:



Landing Page/Home Page

This is the landing page for the platform where the user will have three choices:

1. **Create:** Clicking this button will allow the user to immediately be prompted to create a video unless they have not made an account. If they have not made an account they will be directed to the sign up page.
2. **Browse:** Browse media from the various categories that are signified in the second part of this page. The user can click on a category and it will filter to show all of the videos that are created with this category topic. Additionally, if a user clicks the image (which is the box with the x) the user will be able to view the video or read the brief description of the video that is underneath the video.
3. **Sign In/Sign Up:** Users will be able to click the button to join the WeKnow community in order to access the privileges of creating content for the community and begin sharing knowledge.

Sign Up/Sign In Page

In these two successive screens the user will be prompted to create an account to join the community. The user will have to first create a username and password. They will enter the password twice, one to confirm the password. The second screen will prompt and ask for their date of birth, gender, and country. This page will also make them aware of the confidentiality agreement of the platform.

Join Show & Tell

It's easy and free!

Username

Password

Confirm Password

Confidentiality Agreement

Show & Tell

Date of Birth:

Gender:

Country:

I have READ and AGREE to the terms and agreements

< January > 2017						
Mo	Tu	We	Th	Fr	Sa	Su
1	2	3	4	5	6	7

Confidentiality Agreement

Show & Tell

Date of Birth:

Gender:

Country:

I have READ and AGREE to the terms and agreements

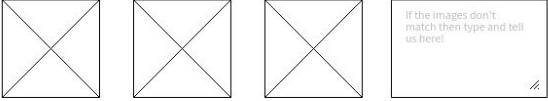
< January > 2017						
Mo	Tu	We	Th	Fr	Sa	Su
1	2	3	4	5	6	7

Pre-Interest Survey


The user will be prompted to answer questions about their interest and expertise to customize their gallery page to their liking and interest. This will consist of 2-3 questions. On this page they will have images that they can select to answer the question. The last question will allow them to either select an image or answer through an input text box. As they complete one question the progress bar will move them to the next questions. This information of interests will

then be used to filter their interests on the gallery page of the topics that align most to their survey.

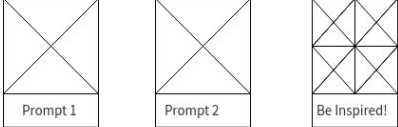

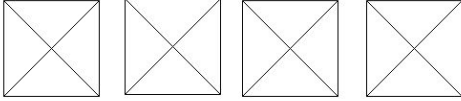
What are you an EXPERT at?




If the images don't match then type and tell us here!



What do you like to do during your free time?



Prompt 1 Prompt 2 Be Inspired!



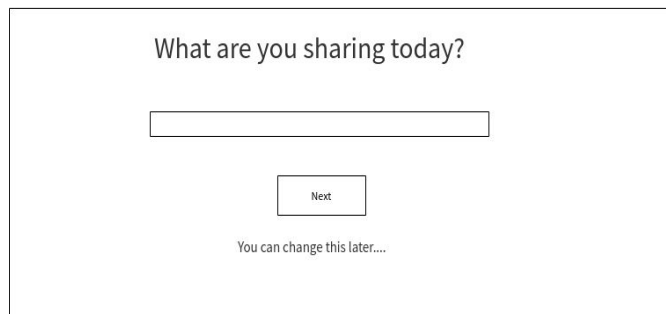
Guided Prompts Page

The user will be presented with 2 options of prompted video ideas on this page as well as the option of being inspired by others work. The first prompt will engage the user to create a DIY video while the other will be a prompt to Share a Perspective. Either prompt will bring them to the video creation tool. If the user doesn't like either of the two prompts they can click on Be Inspired which will lead them back to the gallery page that is now customized based on their pre-interest survey. The circle with the plus sign has a click function that will also bring them

directly to the video creation feature and the eye will have a click the function that directs them to the gallery to view other projects.

Title Creation Page

The user will answer the prompt question with an input function that will limit the amount of characters that can be inputted. The purpose for this limitation is to teach learners, informally, the skill of focus and clarity in topic choices. The user will then select the next button that will guide them into the video creation tool. Learners will be able to come back, review, and modify the title of their work after completing the 6 frames.



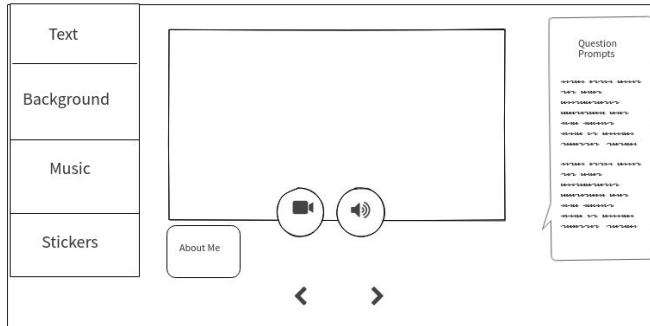
The screenshot shows a simple user interface for creating a title. At the top, the text "What are you sharing today?" is centered. Below this text is a horizontal rectangular input field. Underneath the input field is a small rectangular button labeled "Next". At the bottom of the interface, the text "You can change this later...." is displayed.

Video Creation Tool

In this phase of the platform the user will begin their knowledge representation process through the following steps:

1. The user will begin in the first phase → About Me → They can press the camera button that will use their camera for recording or they can select the audio button which will use their microphone to record
2. On the right side panel the user will have guided questions to aid them in creating a great introductory frame detailing who they are.
3. Following the recording of the video or audio the user can add extra elements through the click function. On the left side of the screen the user can select an element, (i.e. Text, Background, Music, and Stickers) and when they select an option the other options will collapse and the user can choose from the library of the elements to add to the frame. This feature will be completed using a drag and drop feature overlaying the video/audio that was previously recorded/taken .

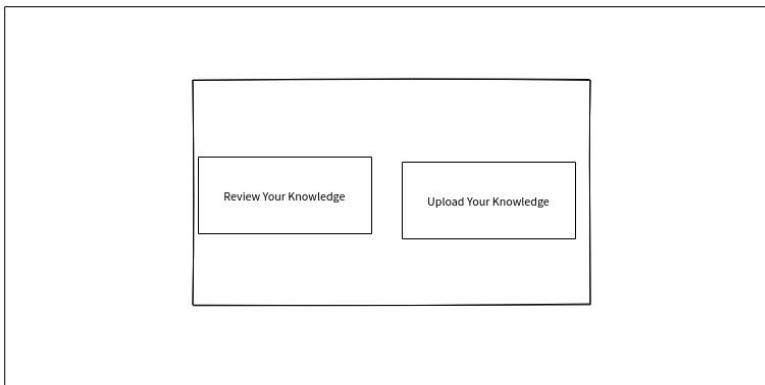
4. Once the user is satisfied with their first frame they will select the forward arrow and be prompted to complete the next frame.
5. This process will be iterated until they have completed all 6 frames.

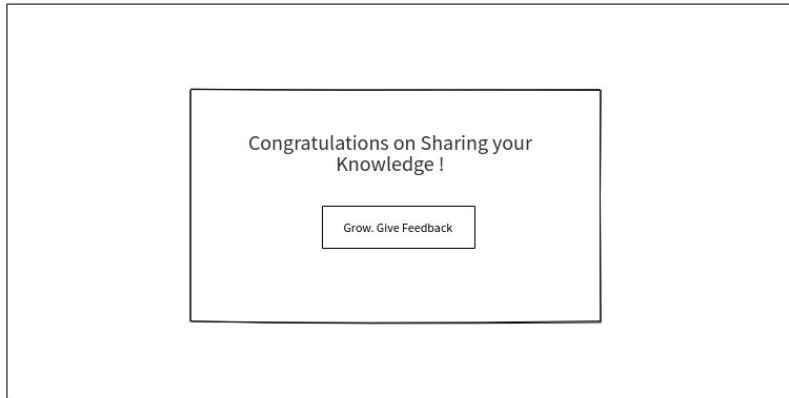


Finalizing/Publishing Knowledge

At the end of their creation the user will have the opportunity to review their knowledge or upload their knowledge.

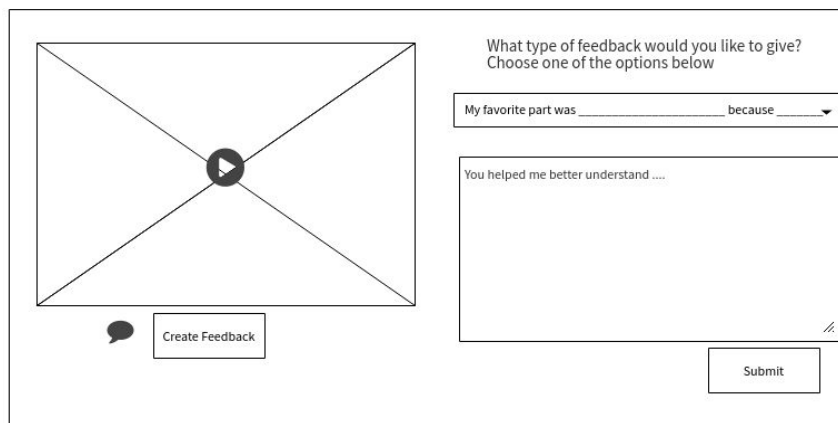
1. Review Knowledge- the user selects this button and a pop up video of their completed project will be displayed within the original video creation tool.
2. Upload Knowledge- The video will be published to the community and immediately added to the gallery according to the topical categories that were selected for the video.





Completion Message

Users will receive a completion message when their video has been successfully uploaded and then they will be prompted by clicking the Grow. Give Feedback button that will implement the feedback component of the platform. This will lead them to a video that is within their categorical interest from the Pre-Interest Survey.



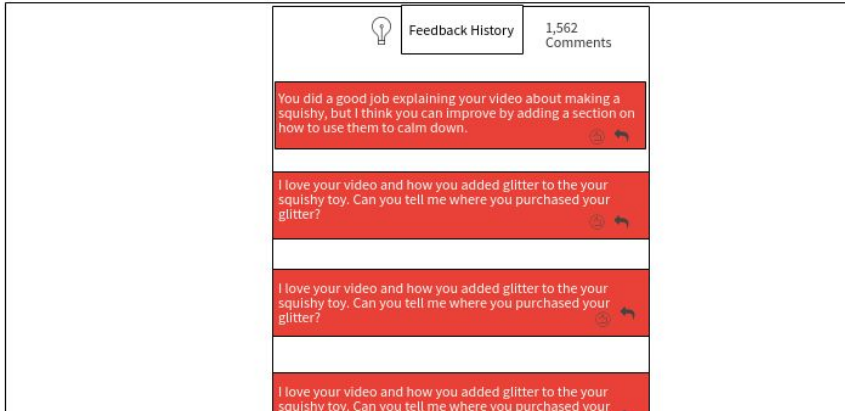
Feedback Cycle Phase 1

Users will view the video that they are interested in and then they can click the “create feedback button” or the comment icon for two different features.

1. Create Feedback- The user will be prompted with the question What type of feedback would you like to give. Following this they can select from a drop down menu guided questions of feedback to give. Once they have selected the guided prompt they are interested in the feedback sentence stem will populate within the input frame and the user

will be able to complete the feedback by filling in the blanks. Once complete the user can select the submit button to add the feedback to the video.

2. Comment Button- The user can view the comments of the video that others have posted and can choose to add comments of feedback after they have browed other feedback.

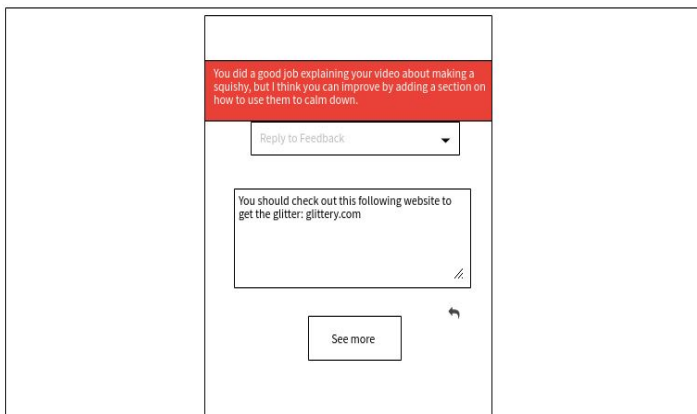


Feedback Phase 2

This platform has two-fold parts to it:

User- This is where the viewer of the content can browse the comments and feedback that others have posted and then they can click the lightbulb to take them back to the feedback Cycle Phase 1 to add feedback if they have not done so yet.

Profiler- The creator/profiler can use this page to respond or react to their viewers feedback. The profiler can select the thumbs up button to acknowledge that they have read the feedback or they can select the reply icon to respond to the feedback that the user has. Additionally, the profiler can click the feedback history button to view more feedback and comments from other users.

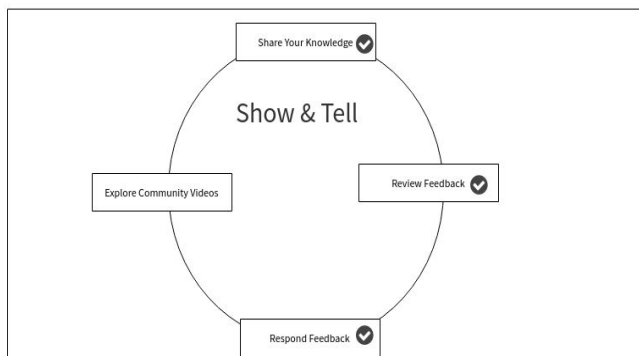


Feedback Cycle Phase 3

Once the profiler has clicked the reply button the feedback that they will respond to will populate on the screen as an individual frame for feedback. The Profiler will be able to select from the drop down menu the type of response to feedback that they will like to use from the pre-set options. Once they have selected the option it will populate in the input box. If they user chooses to create their own response they can select *create own response* and type their response in the input box. The profiler will click the arrow to submit their reply. Following they can click the See More Button to back to their feedback history.

Feedback Cycle Task Page

Once the user has successfully given feedback they will view their progress through the cycle of creation, engagement, and feedback within in the community to visually represent their progress by adding to the community culture. Each section will have a checkbox if completed and will be blank if not. The user will be able to select the button to go to that task to complete.



11. Implementation

11.1. Prototype

The prototype is available here:

<https://xd.adobe.com/view/cfda5ec5-cbba-4de7-bdea-f10a6d457a68/>

11.2. Plan of implementation

The first phase of the implementation will consist of testing the platform with the students in the Instructional Design of Technology course at Teachers College, Columbia University. A survey will be used to obtain participants' feedback and suggestions, and one-to-one observations will provide the designers information about the challenges faced by the users when navigating the platform.

A second phase of implementation will consist of testing the platform with a group of learners from the target audience of 8-14 year old tweens. Two girls and two boys per grade level (from 3rd grade to 8th grade). In total, 4 learners per grade, and 24 learners in total will participate in the second phase of implementation. Learners will be asked to create at least one video per month, watch other learners' creations and engage in feedback and feedback responses at least twice a month. This phase will go on for six months.

12. Evaluation

12.1. Evaluation Plan for the learning platform

The goals of the evaluation plan for the learning environment will be:

1. Assess the usability and friendliness of the platform with users 8-14 years old (tweens).
 - a. Are functions and buttons easily found?
 - b. Are different media (video, audio, image) easy to incorporate in each frame?
2. Assess whether scaffolds and prompts provided are useful and easy to understand by target audience.
 - a. Do learners understand what each frame asks them to do?
 - b. Are feedback scaffolds and prompts useful and easy to understand?

Methods:

Think-aloud protocol: think-aloud protocol will be implemented with individual learners to determine whether the platform is easy to use, the functions are easily accessible, the instructions are clear, and the scaffolds and prompts useful. This method will allow the designers to identify users' common challenges while using the platform. This formative evaluation will be used to improve the information architecture on the platform and facilitate the user experience.

One-to-one evaluation: During one-to-one evaluations, the designer will ask the users to perform certain actions in the platform and measure: time of execution, challenges presented, errors made.

Survey: A survey will allow the designers to obtain information about the users' perceptions, attitudes, and opinions about the platform. This information will be used to determine if the platform is considered engaging, useful, and accessible to users.

12.2. Evaluation Plan for the learners

The goals of the evaluation plan for the learners will be:

1. Assess the products created by learners: videos, feedback, and feedback responses in order to determine:
 - a. Learners position themselves as experts regarding a specific topic or idea.
 - b. Learners provide meaningful, constructive feedback to other users/creators.
 - c. Learners respond to feedback thoughtfully and incorporate suggestions and comments into the improvements of their work.

Methods:

Survey: Every month during the six-month testing period there will be a survey with students that will address the following questions:

1. Does the learner see him/herself as an expert of knowledge?
2. What did they learn from the cycle of feedback?
3. Does the learner feel more confident in giving/responding to feedback?
4. Does the learner feel like they are now a creator?

Evaluation of products: The quality of the videos in terms of language, media selected, sequencing and organization of content will be qualitatively evaluated. Feedback and feedback responses will be qualitatively evaluated to determine whether learners use appropriate language, use statement starters or prefer customizable comments, offer meaningful and specific feedback, and engage in collaboration. Additionally, first and later versions of learners' creations will be compared and evaluated in order to determine whether feedback suggestions were incorporated into the videos. This evaluation will allow the designers to determine if the learning goals are being achieved by the users. The quality of learners' productions (videos, feedback, and responses to feedback) will indicate whether learners are effectively creating multimodal representation of knowledge, positioning themselves as experts and creators, understanding their own and others' creations, and reflecting on and evaluating their own and others' creations. Learners' creations will be assessed during a six month period, in which learners will be asked to create at least one video monthly and engage in feedback cycles at least twice a month. These videos will be compared and qualitatively evaluated in order to assess students' progress and learning in terms of the learning goals.

12. Future considerations

Collaborative creation

The project could be expanded by adding a new learning goal and new features to support it. Learners will be able to *collaborate* with other peers in the creation of multimodal representations of knowledge. This means that learners will work and learn together through the selection, organization, and presentation of knowledge. Additionally, through the remix functionality, learners will be able to use other peers' work to create a new representation of knowledge.

Designing for Diversity

“Curriculum and instruction should include accessible alternatives that engage students with different backgrounds, learning styles, abilities, and disabilities” (Lewis & Sullivan, 2017, p. 313). Future iterations of the design will incorporate elements to support learners with visual and hearing disabilities. Additionally, the platform will support different languages in order to foster global participation and collaboration, cultural awareness, multicultural learners.

-Visual involvement: audible options for instructions, prompts, feedback, and feedback responses will be incorporated to encourage visually impaired children to participate, create, and collaborate with other learners. This means that learners will be able to listen to the instructions and scaffolds on the platform, but will also be able to listen to the feedback and feedback responses. Additionally, learners can provide feedback and feedback responses through audio recordings. Alt tags will be included for all graphic items

-Hearing involvement: Video creations will include text captionings and transcripts in order to support hearing impaired learners. Visual and audio notifications will be provided for all necessary cues.

-Multicultural learners: All learners are multicultural (Lewis & Sullivan, 2017). Hence, multiculturalism is an essential component that must be addressed in our design, especially because we seek to foster global citizenship and collaboration among learners. Multiple languages will be supported in future versions of the platform. Subtitles and translations will be available for videos, feedback, and feedback responses.

Metacognitive Development

Future iterations of the platform will include more specific prompts and scaffolds to support students' metacognitive development. Through the feedback and feedback response cycles we aspire to support students in the process of planning, checking, monitoring, selecting, revising, and evaluating their learning and their progress. WeKnow's functions of reviewing and republishing their creations will help students reflect on their work and use these reflections and personal assessments to know more about themselves as learners and creators, and to continue learning and engaging in the community.

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