Mobile Application development for the United States Figure Skating Association

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By
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Abstract

This project is about researching how to build and develop a mobile application for the skating community that interacts with events and information from the United States Figure Skating Association (USFSA), which does not yet have one official place for information. Many USFSA members have to score through different websites and social media accounts to find specific information. Having one application has made it an easier, more organized, and accessible way to access all types of information and help the figure skating community come closer together. The main objectives for having an app are User Growth, Engagement, and Brand Awareness. Having all these types of content in one location will help skaters, fans, coaches, and more have easy access to information. The research will include the type of design needed to make the application user friendly, software programs needed to create the app, IOS and google play versions, etc. The mobile application prototype will be created using design softwares such as Figma, Canva, and Adobe photoshop. I used human-centered design when designing the app and took into account factors such as the business needs (how to make it commercially successful), empathy (Is the design focused on the people?), creativity (what creative ways are there to solve users' issues?), or user friendliness. This paper looks at the development of other sports apps and how they have helped improve engagements with their own members to be more involved in their sport and connect fans from around the world. This paper will also look into the effect mobile applications have had on our society.

link to my app prototype:
https://www.figma.com/proto/A71WK8vAOqIOnqninagOna/USFSA-APP?node-id=9675%3A26&scaling=scale-down&page-id=32%3A192&starting-point-node-id=9675%3A26
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Introduction

Problem Statement

The US figure skating association (USFSA) and the ice skating union (ISU) use many different avenues for distributing their content to those involved in the skating world. There is an excessive amount of content separated as different categories across multiple applications and websites. The goal of the proposed app is to make it easier for the skating community to navigate through all the features that the app contains and allow everything to be in one location rather than needing multiple applications. It will also make it easy for users to look up information that they may need instead of looking through different websites to find the answers they are looking for.

Having one application will make it an easier, more organized, and accessible way to access all types of information and help the figure skating community come closer together. The figure skating community is made up of all ages, those who are both skaters as well as non-skaters, that all share a common interest and love for the sport of figure skating. Having all these types of content in one location will help skaters, fans, coaches, and more have easy access to information. My project was done as a prototype for an app for the United States figure skating association (USFSA), where it will allow users to access different kinds of content in one location as well as help bring the figure skating community closer together. Coaches, skaters, and even just fans of the sport can share information such as tips, recommendations, etc. The figure skating community has been more divided than ever after the recent doping scandal from the Beijing 2022 winter olympics, where Russian figure skater Kamila Valieva tested positive for a banned substance after she'd helped the Russian Olympic Committee win gold in the team event. This app can help unify those from around the nation and maybe even around the globe. By the
end of this project, I would have understood how to effectively design and build a prototype for a successful mobile application. I want it to be an engaging and user friendly application that combines all of the app features into one idea. This way it makes it accessible for everyone including skaters, coaches, and skating fans. Additionally, during my project I also want to understand in what ways would using this app help in improving engagement for users in the sport of figure skating.

The project questions that I hope to answer are:

- How to build and develop a mobile application for the USFSA that is accessible and connects USFSA members with their common interest for the sport of figure skating.
- Develop a mobile application that has the following characteristics/features:
  - Current news, events, Journal/record book, on-ice and ice-training educational lessons, community boards, and access to USFSA information
- What are the guidelines or best practices (current) for creating a mobile app in general?
- How does social media play a large role and what effect has it had on communities (specially the figure skating community)?
- In what ways would using this app help in improving engagement for users in the sport?
Figure Skating is a competitive sport that uses jumps, spins, lifts, and footwork movements on ice. The invention of steel blades by Edward Bushnell and the development of adding ballet elements to figure skating by Jackson Haines evolved figure skating into what it is today. (Olympics, 2021) The name figure skating comes from the patterns that skaters make on the ice. There are four main types of figure skating; singles, pairs, and ice dance. It was also one of the first sports to be included in the winter olympic games and it is one of the most popular sports of the games today. The International Skating Union (ISU) was created in the Netherlands in 1892 to oversee all skating sports and competitions internationally. This union also includes speed skating, synchronized team skating, and short track skating. U.S Figure skating was founded in 1921 and is the official organization for figure skating in the United states. They have over 750 members, school affiliates, and collegiate clubs (usfigureskating.org). Figure skating was popular in the United States and was in demand to be watched on television, especially during Dorothy Hamill’s reign. However, it became less popular during the 70s with many believing this is due to the lack of medals team USA was winning. The sport did gain popularity again in the 90s with the success of Tara Lipinski, Michelle Kwan, and Kristin Yamaguchi. The numerous scandals that plagued the figure skating community during this time also helped in the sports popularity. Such as the infamous Tonya Harding and Nancy Kerrigan scandal that put figure skating on the news every night. “This was the first time that people started paying attention 24/7 to something that they couldn't get enough of.’ Ann Schatz, the Portland-based sports journalist who was the first person to nab an interview with Harding after the U.S. Championships' ” (Refinery29, 2018). The decline in International success in the United States in parallel to the growing success of the sport in the Russian program brought about a large rebrand
by U.S. Figure Skating. The organization created the Learn to Skate USA program and the Basic Skills Program to provide for both recreational and competitive skating. These programs proved to be great success for the organization and many current U.S. skating stars came from those programs.

U.S. Figure Skating is active on many social media platforms and uses them to connect with members and fans around the world. The organization can be found on Twitter, Facebook, Instagram, and YouTube. There are too many different applications and websites in regards to the US Figure Skating Association (USFSA) and the International Skating Union (ISU). There is an excessive amount of content separated as different categories across multiple applications, social media sites, and websites. Many skating fans find themselves scouring social media sites to get updates on their favorite skaters and how to figure out if it's factual or fake. Having one application will make it an easier, more organized, and accessible way to access all types of information and help the figure skating community come closer together. Having all these types of content in one location will help skaters, fans, coaches, and more have easy access to information.

This project will be about researching how to build and develop a mobile application for the United States Figure Skating Association. The research will include the type of design needed to make the application user friendly, software programs needed to create the app, iOS and Google Play versions, etc. The goal of this app is to make it easier for the skating community to navigate through all the features that the apps contain and allow everything to be in one location rather than needing multiple applications. U.S. figure skating doesn't have an official mobile application and instead post their content on their website and social media pages.
Furthermore, many of these other mobile applications have been created by small developers who make these mobile apps due to their interest in skating. Having one official mobile application will also make it easy for users to look up information that they may need instead of looking through different websites to find the answers they are looking for. This review also looks at the development of other sports apps and how they have helped improve engagements with their own members to be more involved in their sport and connect fans from around the world.

Smartphones are a part of our everyday lives. They have integrated their way into our society and changed the way in which we communicate. Upon waking up in the morning, the first thing many people say they check is their phones. Some people even work through their phones. Smartphones have been integrated into our society seemingly overnight since the first iphone was released in 2007. “Smartphones have become ubiquitous pocket computers shaping society in more ways than one realizes (Aschoff, 2020).” Smartphones allow users to connect with others worldwide instantaneously and provides a platform for global justice movements. In contrast, Nicole Aschoff also discusses in her book *The Smartphone Society: Technology, Power, and Resistance in the New Gilded Age* the negative impacts smartphones have had such as how corporations have been accessing their customers personal data and unmonitored surveillance. Aschoff also points out how large media companies like Google and Facebook have influenced social, political, and economic outlooks. Instead of large organizations exploiting smartphones for profit it should be used as a way to benefit people and its everyday users.

Mobile application development is the process of creating a computer program or software application that is designed to be able to run on a mobile device. There have been
thousands of mobile applications that have been developed which have helped make tasks easier and more efficient. The most popular categories of mobile applications are social, work, gaming, health & fitness, and education & learning. Such as Ring to access your doorbell camera, Amazon to shop online, Postmates to order food, or Uber to get a taxi. Mobile applications are essentially tools we utilize to complete or assist in tasks that we set upon in our daily lives. They are a constant source of information, entertainment, and make it easy to communicate with others. “Apps can help solve the problem, but only if you have the foresight and/or bandwidth to install them when you need them. (Cunningham, 2016 )”. Mobile applications are great but some users might not want to download an entire app just to use certain features of it. Android is developing a feature called Instant Apps which can take users directly to the app without installing it. “Mobile websites are often more convenient than their desktop counterparts when you're on your phone, but they're also usually missing some important functionality that's available (or just easier to find) on the desktop.” (Cunningham, 2016). Smartphones are portable, lightweight, and can easily access information compared to a desktop laptop. Cunningham goes on to explain how developers are modularizing their apps, where a software is divided into smaller modules which can be modified, exchanged, or replaced between other modules or different systems. This will vary between different applications but by doing this developers can create different configurations and increase the value of the app for their users.

Many companies are creating apps as a way of “getting their content in the hands of customers on the move.” Many marketing and digital media strategies are trying to get their digital campaigns to have a “click to download” as their call to action to encourage customers to download their app. Reports in data show that a lot of companies' traffic comes from mobile applications rather than websites. ESPN’s developer center allowed third party developers access
to their apps. This allowed developers to add many new, unique, and fun features to their app which brought a lot of traffic to ESPN’s mobile apps. The concept of mobile applications can be very innovative for companies and allows developers to market the company's products and services in a creative and interactive way. This also opened up the idea of using mobile development communities where companies can use developers from communities to help in developing their apps. “Open up your APIs, and you open up innovation that may help move your company a huge step forward. (Salz, 2012)” Mobile applications are also constantly being developed and advanced especially with new micro-processing technologies, they will be able to run an app on multiple different platforms as well. For example, you can run the Instagram app on a desktop.

There is the technical side of development where the developers have to consider the screen size and hardware requirements and there is the user persona where developers need to understand who they are designing it for. When designing an app the developers have to know what the purpose of their app will be used for. They need to understand their users' mobile habits, age, preferences, and other elements that would make up their customer base. A research study that was done in 2018 by the University Politehnica of Timisoara looked into how mobile applications can be used for education. The researchers created a Virtual Campus mobile app for the university and compared it to other similar mobile applications. They then created an enhanced version of the mobile application and analyzed the requirements and principles needed for the development of it. They looked at who their users would be and predicted the types of elements they needed in their mobile app that would best cater to their users. The overall goal is to show that quality apps that are designed for mobile learning will be “useful for teachers and developers designing open and mobile learning environments and applications.” The researchers
developed their application as an android mobile app and they had 350 students download it. The app has features that are similar to the desktop version of the campus website. As stated “in developing it, there were applied principles related to mobile learning usability and design, trying to provide enhanced possibilities for learning on-the-go and also specific notifications' (Holotescu, 2018). The app includes many features that allow students to have access to online learning tools. For example, students can access discussion forums, notifications for assignments, interactive calendar, or visit all their courses and download course materials to use offline. This application is very similar to the blackboard mobile app that the SUNY colleges use. They found that online learning develops students' digital skills and the way in which both students and teachers process information. Overall, they found great success in their virtual mobile apps and found it had a positive impact on elearning experiences. “In the communication and marketing literature, consumer innovativeness is generally accepted as a personality trait, and more recently, Goldsmith and Faxall (2003) defined innovativeness as “interindividual differences that characterize people’s responses to new things' (Rogol, 2018)”. This shows how by understanding what your user persona is, you can build a successful mobile application that can be beneficial to the audience you are trying to target.

I created a mobile application for the US figure skating association in hopes to target those in the figure skating community and bring them closer together as well as have a place to have all information in one location. When looking to see if a mobile application will be the best solution I came across a study done by Kutztown University of Pennsylvania where they researched the effects of consumer innovativeness on sports fan intention to use sports team apps. Mobile apps allow companies an easy marketing opportunity to reach their consumers and also bring in new sources of profit. Many sports teams have been adopting mobile apps into their
marketing strategies. As stated “As a mobile app remains on the user’s smartphone, it enables
sport teams to facilitate interactive engagement with their fans and execute targeted mobile
marketing activities” (Rogol, 2018). This study uses three different models of consumer
innovativeness which are; direct effect, fully mediated, and partially mediated models. This study
used one of the most downloaded sports team mobile apps according to the app store and had
233 actual sports team users as their participants. They had them answer the survey questions on
an online community website to measure the average amount of time participants were using the
app. They measured the participants' consumer innovativeness, their beliefs about sports apps,
their intention to use, and their actual usage. They found that participants had a positive effect
with using the sports apps. They perceived the app as usefulness, enjoyment, and
trustworthiness. The researchers concluded that “Sport fans are more likely to have an intention
to use when they perceive sport team apps to be useful for entertainment purposes due to their
hedonic value” (Rogol, 2018). Their findings also supported that there was a strong relationship
between intended use and actual usage of the apps. In conclusion, sports fans are more likely to
download and use their favorite sports team apps when they feel that it will be a useful source for
information. Sport organizations, like the U.S. Figure skating app that I am creating, should
make efforts to create quality applications that are informative, fun, and enjoyable for their users
to want to use on a regular basis.

Mobile apps are continuing to become a part of our everyday use. They are very
convenient and allow users to quickly access information, services, and connect to others.
Though mobile applications have had many positive effects on our society it has led to some
negative effects. Screen addiction has become one negative outcome from using our phones too
much during the day. A study done in 2017 by Bobby Swar and Tahir Hameed on smartphone
addiction looked into how it's been linked to several issues that impact mental health. The study revolves around mobile applications that are designed to help users become self-aware of their excessive activity. The researchers are looking to see if these types of mobile applications are effective in being “self-help” interventions that will help young people in self-regulating their smartphone use. FOMO or “fear of missing out” is the desire to stay continually connected with what others are doing. The researchers explored the relation that FOMO has as it plays a large role in how an individual engages with their online activity. As stated “People with low basic need satisfaction generally perceive social media as a platform to connect with others in order to develop social competence, and an opportunity to deepen social ties” (Swar and Hameed, 2017). The study surveyed 284 college students were categorized into two different groups based on whether or not they used a “self-help” mobile application to monitor their smartphone usage behavior. They used a path model and tested six different hypotheses. The study found that the mobile applications did help in regulating the subjects smartphone addiction, social media engagements, and other distractions. They concluded that those in need of help for their smartphone usage behavior can download these apps to protect themselves from the negative effects of the smartphones because in today’s society smartphone addiction is seen as a new illness. This study also shows that the participants who had lower psychological needs had a high fear of missing out. This fear causes individuals to have higher levels of engagement on social media which can cause smartphone addictions and distractions.

Social media has become a key source of information for those in the skating community. Social media is important for spreading messages, connecting to others, marketing, and can be used as an important resource for many things. It has made our society very interconnected with one another. There are many ways in which social media can be used; which includes
networking, photo and video sharing, blogging, and more. Some of the most popular social media networks are Instagram, Twitter, TikTok, Facebook, Youtube, and Snapchat. Technology is rapidly evolving with social media right alongside. Social media is a great way for organizations and companies to market themselves, connect with their followers, and promote products and services. U.S figure skating utilizes social media a lot to promote their programs, events, skaters, and competitions. As seen in the U.S. Figure Skating marketing toolkit they use social media to promote their national skating month, which is their largest annual campaign to recruit new skaters to their programs. It is used as a recruitment tool for memberships, clubs, and the Learn to Skate program. They use different social media apps to “publicize ice sports to a wide audience in their community”. They also rely on this social media campaign to create a “media buzz” to help increase its range and success. They host social media challenges, have giveaways, or have an Olympics watch party where they encourage fans to participate. They want to inspire the younger generations to want to learn to skate. Social media is very influential in the skating community because it is not just inspiring the younger generation but the older generation as well. Many assume that you have to start at a young age to learn to ice but many members of the community want to change that narrative. AdultsSkateToo was started by a few fans on Instagram in 2018 to showcase adults learning how to skate later in life. They wanted to encourage that it's never too late to start to skate. It then evolved into a resource/blog site that showcased adult skaters documenting their accomplishments and built up a large community in adult figure skating. This has resulted in many meetups such as skating group lessons, off-ice workouts, showcases, and competitions. The Adults skate too campaign even got acknowledgement from the U.S. Figure skating as well as from Olympians Nathan Chen and Gracie gold.
Many members of the figure skating community find their information through social media. However, it can be hard to find accurate information because they are scattered across multiple social media apps and accounts and sometimes it can be challenging to find out if the information is factual or fake. Many rumors and misinformation can spread on social media and it can sometimes be too confusing and hard to find accurate information. This is why by having an app it can be easier to filter all information through it so it can be in one place and users can know that they are getting the most real and updated information from a reliable source. The structure of Social media relatively stays the same however the different concepts, elements, and components change. For example the social media app BeReal recently became very popular because a lot of people have grown tired of influencers, ads, and how unrealistic social media can be. BeReal grew in popularity quickly because it asks its users to post unfiltered photos of themselves once a day of what they are doing in an exact moment. This gives users and their friends a raw look into their everyday lives without worrying about filters, followers, or constant ads. The app's developers want to encourage people to be more authentic, instead of trying to put on an image of what their best selves are. This brings about the questions of how much impact social media has on our everyday lives and the effects it causes. Social media can impact body image and body dysmorphia. Many popular influencers promote thin-ideal beauty standards on their accounts. Figure skating is an aesthetic sport, so a skater's image is very important. Having a thin body is very ideal in the sport which causes unhealthy workouts and eating disorders. Many of these elite level figure skaters become social media influencers and they may unknowingly be promoting a thin-ideal image to their followers and could especially affect their young fans. Allison booms and Julie Lynch did a research study that looked into how social media has impacted 128 figure skaters. They split their participants into two groups, the first
group were exposed to thin images and the second group were exposed to neutral images. Both
groups were asked about their feelings relating to the images that were shown. As expected by
the researchers those in the thin-ideal group had a more negative reaction to body image then
those in the neutral group. Many figure skaters deal with a lot of pressure to look perfect
especially through social media. The figure skating community often pressures young athletes to
be perfect. Figure skaters are under a lot of pressure to look thin and petite but also to have the
strength and build to be able to perform instance routines and skills. This pressure can come
from coaches, judges, parents, and even other skaters themselves. This can cause one to develop
a negative relationship with their body which can lead to body dysmorphia, anorexia, and eating
disorders. Another study done by the Massachusetts school of professional psychology had
competitive skaters do semi-structured interviews and self reports to paint a picture of the
relationship between skaters and their body images. Skaters who did well in competitions were
tiny, petite, and pretty. They typically fit the idea of the perfect skater. In contrast, there were
many skaters who were more talented and skilled but failed in doing well at competitions
because their bodies were more built and they had a more stronger/ masculine physique. The
results did conclude that “the majority of skaters preferred to have a thinner body shape and size
and experience a great deal of body shame” (Forsberg, 2006). Social media has both its
positives and negatives. For U.S. figure skater Adam Rippon, social media can allow them to
gain support from their fans and document his journey to the olympics. For others like China's
Zhu Yi, who after falling during an Olympic figure skating competition was slammed harshly all
over social media and it can be a gateway for negative feedback.

Sports provides content for the media and many of the athletes rely on social media to tell
their narrative. They can interact with fans, let their fans feel a part of the action, and capture
many behind the scenes shots. The importance of using social media mobile apps can be to tell one's story. Instagram allows users to tell their stories to pictures while youtube allows its users to tell it through video. A study on how elite athlete identities were done to see how their digital story is portrayed on Instagram. Researchers followed two olympic-level pregnant figure skaters and saw how their instagram posts and how it created a digital story. The study used a dialogical narrative analysis and focused on two main research questions. “How do expectant athlete mothers portray themselves in big and small stories? What are the implications (e.g., psychosocial, behavioral) of identity meanings portrayed in digital stories?” The researchers found that the subjects tended to post an ideal pregnancy rather than a realistic one. “These findings show contradictions of motherhood meanings and body ideals (ex: feminine, athletic) vs realities (ex: tired, sore), linked to actions (ex: skating during pregnancy, promoting products or athlete brand), in good mother and biomedical narratives”. The researchers concluded that the participants were on some points creating their own narrative to be perceived as having the “perfect pregnancy” due to social pressures and social media. This shows how impactful mobile applications and social media can have on the figure skating community.

Storytelling is not just important to the user but to the app itself. You can get an idea of what a person is like just by the data off of their phone. My applications will tell a user's figure skating story. Upon all the research I’ve looked into I can apply the information I've gathered into my mobile application design and process. There are both pros and cons in developing mobile applications. There can be issues technically and creatively when designing an app. Designing an app requires the understanding of the two important concepts, User experience and user interface. By following all of these concepts and design guidelines my application can be beneficial for the figure skating community.
METHODOLOGY

There are billions of smartphone users worldwide. The first smartphone was designed by IBM in 1993 and included a touchscreen, calendar, address book, calculator, and other features. The first mobile app is considered to be the arcade game snake which was built into the Nokia 6110 in 1997. The Apple Iphone was introduced to the market in 2007 and was marketed as a 3-in-1 device. Which for the first time combined a music player, the Internet and a traditional phone all into one device. As phones developed so did mobile apps especially with the development of the app store in 2008. When the App Store went live in 2008, it launched with 500 apps, now it has around 1.8 million. Google Play also started out with 50 apps and now has 3 million apps available. The app store is “an online portal through which software programs are made available for procurement and download” (Steele, 2013). Over 85% of consumers prefer mobile apps over mobile cross websites.

There are now two main types of smartphones: iphones and androids. These devices each have their own operating system that can provide mobile applications. Iphones run on the IOS (unix-derived) operating system and androids run on a Linux-based mobile operating system.

As stated by The App Association (ACT) “the app stores serve as curated catalogs for apps, it is clear that they interact and compete with each other to attract more developers and consumers onto their platforms. These platforms continue to innovate and play a crucial role in the highly interconnected app ecosystem.” With people spending over 90% of their time on their smartphone, why not try to make a mobile application that is easy and accessible for users to use. Mobile apps are designed to be engaging, enjoyable, and informative. There are many benefits to
having an app such as faster operation, personalized experience, increased User Interaction, online and offline Capacities, or Instant Updates and Notification.

When first creating an app you have to think about what kind of approach you want to take. The overall goal of most apps is to have a strong interaction with their customer base. According to research data in 2021 by decode.agency the most popular and effective approaches they've observed in the market are task resolution apps, loyalty apps, entertaining apps, customer service apps and chatbots, and content apps. Task resolution Apps are apps that provide services of a specific company to users and can organize or prioritize tasks to accomplish them efficiently. Loyalty Apps are designed to offer rewards and allow customers to interact with a company’s loyalty program. Entertaining apps consist of a broad range of features from leisure apps to communication apps. Such as gaming, social media, music or messaging. Customer service apps let users report problems and help in finding solutions. Finally, content apps build a community and share content exclusively with its users.

My mobile app took the content app approach because I want to build up the skating community. “Marketing agencies are using mobile apps to boost brand awareness and sustain a flourishing relationship with their consumers”(decode.agency, 2021). By building up the relationship with the community it can result in more interest in the sport as well as get a better understanding of the apps users. Data collected from users can be implemented into making the app more personalized and custom for the users. This would help users to engage more and can improve US Figure Skating’s brand. Creating this app will allow all users to have quick and easy access to information. In the skating community the rules are constantly changing especially with the new scoring system they implemented. It will allow skaters and coaches quick access to this type of information, where they can even look up quick information during a training session.
The app hopefully will deliver the best communication speed possible and serve the users more efficiently. A key component to the app will be using segmented targeting which will divide the many features into different segments, this way it appeals to different users needs. Additionally, the app can encourage social sharing through social media buttons. This motivates the users to connect and share their experience on the app with others.

Another factor to consider is Consumer Insight which is the understanding of a users behavior and how they would think. “The understanding and interpretation of customer data, behaviors, and feedback into conclusions that can be used to improve product development and customer support,” according to TechTarget (Marotta, 2021). Developers can gather information and insights on the app's most important features and user feedback. Analytics tools such as Firebase and UXCam provide developers with the ability to gather insights from their users.

**Figure skating app examples**

There are many different types of figure skating apps that have been created. Many of them are compatible on both android and IOS softwares. There are a few skating apps developed by private individuals but they are either not very user friendly or just on one topic. The main goal was to analyze these apps and combine the features that they have all into one app because there isn't an official USFSA app. For collecting data, I created a google spreadsheet of all the figure skating apps that I could find and categorized them so I could analyze their similarities and differences. I explored different app features that I considered using in my prototype. Furthermore, I looked at how effective they have been and if users found it helpful or not.

The learn-to-skate program that is partnered with USFSA does have an app called “Learned to Skate USA” but it is for members only and it is only for skaters to track and record
their progress in skills they are working on. On this app users can chart and track their process in
their digital record book. This app was designed to help skaters of all levels to track the “quantity
and quality” of their skills during a single practice session. It also has a badging system that
awards achievements when you have mastered a skill or passed a level. I liked the idea of having
a journal because skaters usually have a physical journal where they keep track of their skills
after their practice sessions. It would be very convenient to be able to quickly log your session
during and after your practice. When looking at the app feedback, many users stated that the app
was not user interface was not very good because it required a lot of clicking around, not
customizable, nor does it remember the user. Many have called it extremely basic and not user
friendly, I have taken these feedbacks and applied it into my own app.

“Moves in the field” was developed by figure skating coach Dana Tang. She is a PSA
senior movies field instructor in free skate, ice dance, and yoga who also has a degree in
computer science. She developed an educational skating app to teach skating skills, moves and
patterns. The goal is to teach skaters “instruction on placement and technique of skating skills”.
The app also includes a quiz that skaters can take to test their knowledge for each level.
As seen in Figure 1 and Figure 2, the app lists different skills and skill levels. It also provides videos of the skills being demonstrated. However, users have to pay $89 if they want to unlock all of the app's features and videos. Users are encouraged to learn new skills and watch videos of a certified coach and skater demonstrating each skill. There are a few other apps that I have found that have this same concept except this app is the only one that has every level from pre-preliminary to senior. Apps such as “inSkate”, “Basic 1-6”, and “ISA Tests” all have the
same concept of featuring educational videos. However, they don't include all disciplines, missing skills, nor focus on every level, and some concentrate only on one level or one specific skill. For example the app “dance” concentrates only one ice dancing move, more specifically just on the first six compulsory ice dances. “Axel Prep” is another app that uses videos as an educational feature but it only focuses on An Axel jump. The Axel jump is one of the largest jumps to be learned in figure skating because it is the only jump where you are taking off forwards and requires an extra half rotation to land. This app teaches skaters the necessary steps, positions, and prep to learn how to do an Axel jump.

“Balanced skaters” is an off-ice training app that offers workout exercises for skaters to do when they aren't at the rink. “The Balanced Skaters Platform makes world-class training techniques and knowledge accessible to everyone” as stated in the app description. The app offers exercise in basic pre-skating stretches and skill training such as jump and spin techniques. Off-ice training is where skaters can work on their techniques and improve their skill, power, speed, stamina, injury prevention and improve their overall health. It has recently become very popular, especially during the pandemic when the rinks were closed.
As shown in figure 5, I feel as though the app solely concentrates on figure skating skill workouts such as biellmann or waltz jump techniques. What I think that could improve the app is by also including regular workout exercises and daily workouts that skaters can do such as cardio, yoga, flexibility, and more. This is something that I included in my prototype. It can be provided for those that are just starting out and want to learn easy daily workouts they can do from home as well as for those who want to do more advanced workouts. When looking at the reviews many stated that they had many bug issues and could develop problems where they couldn't create an app and they had to pay $50 if they wanted to unlock all of the features.
When looking for other figure skating apps I noticed that USA Gymnastics has an app that is similar to what I want to create. Their app is called “MyUSAGym” which allows users to follow and get updates on gymnastic competitions on all levels, from local to international competitions. As shown in figure 6 and figure 8, it offers users to follow competitions live with frequent updates to rosters, schedules, and results. It also has profiles of athletes for users to follow to see their scores and results.

Figure 6: USAGym competitions  Figure 7: USAGym news features  Figure 8: USAGym results

Figure 9: USAGym location feature
The Sk8CoachFree app is an app that lets users find skating coaches in their area. From the reviews on this app, many say it still needs a lot of work as there aren't many coaches signed up on the app. One reviewer felt that the app wasn't necessary as it is just the same as calling up a local rink and asking information on coaches. Instead of having a find a coach feature I am doing something similar to the “MyUSAGym” app (as shown in figure 9) that has a maps feature that provides information on local gyms such as location, contact information, social media, and website links.

![Figure 10: MLB notifications](image1)

![Figure 11: highlights features](image2)
Major league baseball also has an app called “MLB” that is similar to the app for U.S. Figure skating that I want to create. The MLB contains live coverage of games, scores, highlights, breaking news, player stats, and much more. Their goal is to be the “#1 destination for live baseball video and audio served directly on your ios device”. In figure 10, one of the features that stuck out to me on this app is the customization where users can choose what teams they want to follow and get notifications from. Adding in the element of letting a user control their notification preferences is what makes users feel a personal connection to the app because they have a sense of customizing the app into what they like.

After reviewing numerous apps, I've found features that I would like to have in the U.S. Figure skating app. Some of these are Current news and updates, Find a local skating rink/coaches, educational training videos for both on ice and off-ice exercise, competition updates, and more. In many of these apps I've noticed that users have complained about the user interface and how it is not user friendly as there are many actions that need to happen for a task to be done. When it can be done within half of those actions. Additionally, there are many developer issues like “MyUSAGym” has a lot of error loading issues of scores because the database it is connected to cannot handle the traffic. What appears to be happening is the developers for that app are using two databases one that is live for gymnastic meets determinations and the other for viewing. However, both of these databases are failing to synchronize. I also noticed that many apps did not let users have full access to all of their features unless users made a payment. This resulted in many negative reviews from users because it made it very expensive to unlock the full app. Many of these apps fail to keep up with their development and maintenance which results in bad performance. This is something to keep in mind when designing my mobile application.
Designing the app

Figma is a mobile app development tool that is an efficient way to create iOS and Android mobile apps. It lets a user build an app from scratch and you can customize it without using coding. Figma’s Mission statement is “to make design accessible to all” and giving its users a strong foundation to start from. Figma encourages its users to collaborate with each other and share their work. This software is an open-source tool and offers two types of services. The first service is you can build your app yourself or you can go on their community page to look for templates, plugins, widgets, and livestreams. Some of the features that Figma offers is the app being compatible with multiple devices (IOS, Android, IPad, or Android Tablet), Security and Access, Integrations, Experience, Analytics, Notifications, Additional Admin Seat Pricing, Enterprise Features, and Usage. There are four different plans if you want to utilize Figma’s features. The first plan is a starter version of the software which is free forever. You have access to 3 figma and 3 figjam files, unlimited personal files and collaborators, and templates. The next plan is the Figma Professional plan that is $12/mo and includes the basic features needed to get started with a prototype, sharming permissions, private projects, audio conversations, and team libraries. The third plan is the Figma organization plan which is $45/mo and includes everything from the starter plans and additional capabilities to get more out of your app. The final plan is the Enterprise Plus which is $75/mo and includes all the features from the other plans, offers Premium support, access to their Premium Graphic Design Package, and helps organizations scale design processes company-wide.

I used the Figma software to create the US Figure skating app because I felt it best met my needs for what I wanted my prototype app to have and look like. When using Figma they have many options for you to get assistance in different sections of the design process. It includes
templates that you can switch out and customize, video tutorials, a help menu, and an option to access their community feature. It allows for the developer to find templates on design, layout, and functionality of the app without having to worry about the technical side of building an app. I've looked at similar skating apps and have based my app on the best features and functions that I observed from these other apps. I noticed that there are many figure skating apps that concentrate on just one feature and I think it will be beneficial to combine all of these features into one application. This way only one app needs to be downloaded instead of seven apps and everything can be in one central location making it easy to access, manage, and more efficient.

Prototype

The opening screen starts with a login into the app. The login is important because it is like a gateway to the app. It is the first thing that users see when they open the app. The login is a simple screen that is straightforward and clear to what the user has to it. It is also themed to U.S. figure skating colors which can also be seen throughout the app to connect the USFSA brand with the app. Upon logging the user is brought to the home screen which will welcome fans with
the latest news articles, updates, videos, and other information that is highlighted. The bottom panel of the app will have five main categories; Home, Events, journal, and more. Pressing home will always bring you back to the main home screen. Additionally, when first coming to the home page users will be asked what type of push notifications they would like to receive such as breaking news, live streams, competition results, or journal reminders.

![Current News](image)

**Figure 13: Prototype current news**

**Current News**

When going into the news section it will have current news on figure skating competitions, top stories on athletes, isu rule changes, olympic updates, skaters retiring, and any other figure skating news. The next category is events where users can follow skating competitions and events from a local to a national level. They can even favorite specific events they want updates from and access them quickly. Upon opening the events tab the user can press on the specific competition and be brought to a screen that highlights tv coverage (where to watch), results and scores, line-up, and athlete profile. If the event is hosted by U.S. figure
skating then users will be able to video with the live coverage of it. There will also be information on ticket purchases as well.

Figure 14: Prototype event list  Figure 15: Prototype event page  Figure 16: Prototype Social media

**Featured Events**

The Events section is where featured events such as competitions will be listed. Users can even tap on a desired event and receive more information on it. For example, figure 15 a user can learn more information on the U.S. figure skating championship competition. When tapping on that specific event, users will be taken to a new screen where they have the option to see the schedule, practice group lists, the results and any announcements pertaining to the competition. Additionally, there will be a link to watch it live or as a reply which is connected to NBC peacocks services. US Figure skating and NBC have a partnership where NBC streams US
skating competitions. Furthermore, Users have the option to see any social media buzz surrounding the event.

**Social media**

The Events section will also have a social media section where users can see content relating to an event as seen in figure 16. When users sign in to their social media account they can access posts, pictures, tweets, and other content. By integrating social media within the app, users can easily share content and communicate with others. The goal is to promote the event and encourage users to engage with one another. Thus, bringing frequent users to the app and hopefully creating a buzz around figure skating.

![Figure 17: Journal](image1)

**Figure 17: Journal**

![Figure 18: Journal categories](image2)

**Figure 18: Journal categories**

![Figure 19: Skating skill lists](image3)

**Figure 19: Skating skill lists**

**Skating skills journal**

The next category is the journal, which is a digital record book, where skaters can keep track and record the skills they are learning as well as the progress of those skills. When first
coming to the journal screen users can select an on-ice journal and an off-ice journal (figure 17). The on-ice journal is for all skills that are being done on the ice. While the off-ice journal is for workouts and exercises that are done off-ice. Users can select if they’ve already mastered a skill, still learning a skill, or a skill that they want to learn. Figure 18 and Figure 19 show how users can select what type of skating skills they are looking for such as singles, pairs, dance or synchro. Skills are then divided by six levels; preliminary, Juvenile, Intermediate, Novice, Junior, Senior. There's also a search bar for users to quickly search for skills as well.

Figure 20 and figure 21 show how when users select a specific skill, there will be the correct vocabulary term of the move as well as a brief written description of what the skill is as well as the different points you can get when performing this skill in a competition. Below will be a video demonstrating the proper ways to perform the move. As well as on-ice and off-ice exercises that can be done to help in mastering that skill. After every lesson users can keep an
organized record of what they practiced, need improvements on, and can be accessed quickly if needed. Coaches can have their skaters keep track of what they are learning as well as practice elements on their own. The off-ice journal is more of a regular fitness log that has the same layout as the on-ice journal. Off-ice training provided techniques to users to help them perform moves better when going back onto the ice (this became very big during the pandemic when the gyms and rinks closed). It provides daily fitness exercises and workout routines to improve stamina, flexibility, and strength. Some examples of exercise are yoga, pilates, cardio, weight training, boxing, and balance exercise. Users can also set notifications for reminders on certain skills and exercises they want to work.

**USFSA programs, rules, and scoring system**

The next category is the More page. This page will bring you to features that the app offers(Figure 22). The first feature as shown in figure 23 is your user profile. Here is where a user can customize their profile by adding a profile picture, their name, skating club, skating
level, skating team, and biography. Additionally, users can access their account information (email, phone number, member ID). The next feature is for the USFSA programs, USFSA rules, and USFSA scoring system (Figure 24). This tab details the US figure skating association's learn to skate programs, rules, scoring system, technical panels and other information put out by the USFSA. Upon clicking on a category will be brought to the most recent official PDF file put out by USFSA. For example, if a user wanted to know about figure skating programs for colleges then they would press on the USFSA Learn to skate USA tab and be brought to the pdf. The pdf then details all the membership and program information that entails collegiate skating such as a USFSA membership also includes programs in synchronized skating, collegiate synchronized skating, and intercollegiate team figure skating. This provides a quick and easy way to access this type of information. The scoring system is constantly being changed and updated which results in many to question the rules. As a skater myself I was always questioning the scoring of an element to my coach. This way it will be easy for coaches, skaters, parents, and skating fans to access important information. There will also be a frequently asked question (FAQ) section below the PDF and Skaters can send in videos of their moves and get scored by real judges to see what skill level those moves will be at. This increases interaction within the app as skaters, coaches, and judges can get feedback on their elements as well as advice on what they can do to perform the skill better.
The next tab will feature team USA athletes profiles. Users can see the selected athletes for the different team USA skating teams. Which are Women's singles, Men's singles, pairs, dance, and synchronized teams. As shown in figure 25, users can see the current roster of skaters for team USA. Each athlete will have a profile that includes a picture of the skater, skating club/team they are a part of, test level, location, bio, and a highlight video and pictures. The users can also favorite athletes that they want to follow and get updates from as well. This helps the users in personalizing their experience on the app and have them be more involved in an athlete's skating career.
Find a rink

The next option will be to find a local skating rink where by turning their location on skaters can look at a map and find rinks that are closest to them. The feature can identify the location of the users in real-time to provide geography-specific content (Figure 27). When pressing on a rink users can see the rink profile that lists the location, phone number, email, hours, admission prices, ice sessions (public, freestyle, and hockey), and website and social media links.
Community boards

The final tab will be a community boards tab where users can join group discussions. Users can interact with each other through these boards (Figure 28). Users can ask questions, receive peer-to-peer support, discuss interests within the sport, and make social connections. As shown in figure 29 and figure 30, users can talk about competitions, have a Q&A with the national team, ask for help (maybe they are looking for a new costume designer), recommend equipment, or talk about skating boots.
As seen in Figure 31, there will also be a section called Coaches corner where coaches can give out advice and help each other. This allows users to engage with one another and bring a sense of community to the app where users are helping one another. This gives users another way to get information instantly by messaging each other and engaging in conversation. Additionally, it can start conversations on issues in the skating community such as body image disorders, overworked athletes, and the pressure young athletes face on social media.
Final feature that I would add into my prototype is push notifications options where the user can select what notifications they want to receive as seen in figure 32. Users can get notifications for news alerts, live events, journal alerts, and can turn on their location to get a notification when they are near an ice rink with the find a rink feature. Figure 33 shows what the notification would look like when it pops up on a locked phone.
Project Outcomes

Figure skating is starting to become a popular sport in the United states. Especially after the success of Nathen Chen due to his gold medal winning routine in the 2022 Olympics. Out of all the olympic sports Figure Skating is one of the most rapidly growing sports as membership to USFSA has increasingly risen In the past 15 years. Within the United states, there are more than 600 clubs nationwide (U.S. Figure Skating, 2005). The purpose of these clubs is to promote the sport of figure skating and bring a sense of community for skaters, coaches, parents, and fans.

This is why I felt that by creating an app it can help unite the figure skating community and be a quick and accessible source for information. Mobile apps allow users to set up their preferences and Personalize an app to their tailored interests, location, usage behavior, and more. “Apps can also track customer engagement then utilize it to offer custom recommendations and updates to the users.” (Deshdeep, 2022). Furthermore, when compared to websites, mobile apps offer faster access to content and smoother interactions than having to look through a website until you find what you are looking for. The efforts users would have to make is decreased because the features shorten the time users need to perform a task in an app. Mobile apps offer organizations a new branding experience to users with the ability to access their information offline as well. Through the mobile app, it is very easy to access different features such as the camera, GPS, and contact list. Which will hopefully make the user experience interactive and more fun. “According to Flurry Analytics 2016 survey, measuring time that mobile users are spending surfing the internet, 90% of users prefer using applications to mobile websites.” (rubygarage, 2019). Mobile apps also make it easy for the organization to reach a broader audience, which is the ultimate goal in spreading awareness for the sport of figure skating.
Building the app

I want to understand how to effectively design, build, and publish a successfully running mobile application. I want it to be an engaging and user friendly application that combines all of the app features into one idea. This way it makes it accessible for everyone including skaters, coaches, and skating fans. I've learned a lot about mobile app development and alot needs to be thought about in order to have a successful app. To develop an app you need to have a development strategy.

● What is the app?
  ○ To make an app for the U.S. Figure Skating Association.

● What is the objective of the app?
  ○ To make it easier for the skating community to navigate through different features and allow everything to be in one location rather than searching through multiple applications and web pages.

● How will your mobile app solve an industry problem?
  ○ To help improve engagement with their own members to be more involved in figure skating and connect fans from around the world.

● How will you market your app and to whom?
  ○ The app will be marketed through social media and it is targeted towards skaters and members of the figure skating community.

You then need to understand your user's persona. My app is targeted towards those with a U.S. Figure skating membership (Membership is not exclusive to just the U.S. but there are some exclusions if you are competing with another country.) My audience will use my app on a daily basis, similar to a fitness app where they can keep track of their skating progress, get information
on US figure skating association rules and updates, profile of the national and olympic teams, current news, community boards, and other features. There are four key elements to take into account when designing the app. The first element is functionality, is the app practical and does it serve its functions. The second element is design, is it user friendly or too complicated. The design should be minimal but still maintain a high quality. The next element is reliability, is it performing consistently well. The Last element is Usability, how well a user can use the app to “achieve a defined goal effectively, efficiently, and satisfactorily” (interaction-design, 2019).

The next step to consider when building an app is the UX/UI design which is the visual elements that users interact with and how they feel about the interaction. UX stands for “user experience,” and UI stands for “user interface”. User experience is the overall experience of using the app. Users should have the feeling of familiarity, they know where everything is in the app. They don't want to feel frustrated, like they are wasting their time, trying to figure out what each and every button does. An example of a user experience is in my off-ice workout feature that shows a training video of a specific skill and information for that skill on one page. This provides the users with the ability to see it all in one picture. User interface is the display of the app on a mobile device. It's where users can interact with what's on the screen, basically a bridge between the user and the app itself. An example of a UI design is the journal feature where you can keep track of your skill progress and use emojis to quickly tell the app how you feel during a practice.

When designing each screen I first had a simple layout of what I wanted each screen to look like, where the call to action buttons could be, and locations of other features to understand the visual structure of the app. I mostly focused on the overall aesthetic and user-friendliness of the app. After coming up with a basic layout is when I focused on the details and design aspects
such as color, font, graphics, and more. The color palette was important to me because I wanted the app to feel aesthetically and visually pleasing because I want the users to be able to identify U.S. figure skating’s brand while also keeping the focus on the app's content rather than getting users distracted by unnecessary features and design elements.

A feature that I had first had planned to be a part of the mobile application was to find a coach element. Where users can locate local coaches and schedule lessons with available skating coaches at different rinks (for a comparison it will be very similar to how users on the petsmart app can book grooming appointments for their dogs). However, upon my research I found that this feature had not done well on other apps and ultimately I did not incorporate it into my app. I felt like I had too many features in my app already and adding this feature may be too much and unnecessary as there is already a find a rink feature on the app. Many reviews, as stated earlier, felt that it wasn't necessary and calling up a local rink can get you more information about their coaches then the limited information that is posted.

When looking at the MLB app I really liked their push notifications and how users can customize what type of notifications they wanted to get. Research done by 10xds.com found that approximately 43% percent of iOS users and 91% percent of Android users. Additionally, according to a Pushwoosh article “push notifications deliver as high as a 70% opt-in rate on average. When compared with email marketing’s 5%, the difference is clear.” emailing marketing is starting to decrease because users are immediately alerted of updates relating to the app. App developers can deep link their content so when users click on the push notification, it will take them directly to the app. I integrated this into my prototype because I felt that it gave the users a customization aspect where it provides direct engagement with the app.
In doing my research I’ve also learned about the maintenance of mobile applications. Apps usually store their data locally on mobile devices, whereas websites generally use web servers. Mobile app backends are what stores, secures, and processes the data. Information is stored on remote databases that make it quick and easy to sort through. Information such as logins, messages, iCloud data, and more are sent through a backend to be processed on a server. When a user opens the app they are remembered and have the feeling of familiarity because they know where everything is in the app.

**Conclusions and Future Outlook**

There are many benefits to having mobile applications. It can be used to access information quickly as an educational resource. U.S. Figure skating can use this app as a way to connect with their members and bring awareness to the sport of figure skating. There have been multiple different types of figure skating apps that carry many features. However, having all of these apps can be too overwhelming and unnecessary. Furthermore, it can be hard to find true information as many members use social media and blog sites as a means to get information. Having one application will make it an easier, more organized, and accessible way to access all types of reliable content. Having these features in one centralized location could help skaters, fans, coaches, and more have easy access to information.

In looking towards the future, after the app gets launched U.S. Figure skating should focus on marketing. It is important to have a marketing strategy because it will help in spreading awareness of the app and encourage those in the skating community to download it. Through advertising, outreach, and public relations campaigns USFSA can get the app to be a success and build awareness around the app and the overall brand. It is also important for them to be able to
market the app within app stores. It is only the first step in securing your app’s first downloads. Marketing strategies such as social media profiles (Olympic skaters), press and influencer marketing, and app store optimization (ASO). App Store Optimization (ASO) is a strategy used in marketing to increase the visibility for a mobile app in app stores such as Apple's App Store and Android’s Google Play Store. “Users gained through organic search on the app stores typically demonstrate the most engagement” (Bell, 2022).

I analyzed about 20 figure skating sports mobile apps that are similar to what I had in mind for my prototype. Through my research, I was able to determine and figure out the best methods on creating a mobile application and what would be the most resourceful features to integrate into the app. It gives a chance for USFSA members to interact with skating content as they never had before. Features such as the moves in the field journal can allow users to be more involved with their sport and encourage them to want to improve and gain more skills. Additionally, members can engage with themselves and interact with users in real time with community boards and social media access. Fans can connect with one another on similar interests and follow their favorite athletes skating careers.

This prototype will hopefully be very resourceful and educational to the skating community. It would be a source for skaters to organize, learn, and follow skating content. The app will be a place for members of the U.S. figure skating and the skating community to get official results, news, videos, Journal, and more. In conclusion, this app could help to bring awareness and increase interest to the sport of figure skating.
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Appendices

A. Figure Skating Mobile Apps data sheet

B. Prototype Link

C. Cataloging Worksheet
# Appendix A

<table>
<thead>
<tr>
<th>Mobile app name</th>
<th>Type of app</th>
<th>Description</th>
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<tbody>
<tr>
<td>Learn to skate</td>
<td>Record book</td>
<td>Chart your progress and track your way to skill mastery using the digital record book, elevate your practice sessions with the daily practice tracker and earn badges for your trophy case with fun on- and off-ice challenges. The practice tracker is designed to help skaters of all levels track the quantity and overall quality of a curated list of skills during a single practice session. Skills may be added from the Learn to Skate USA skills library or manually entered as a custom skill.</td>
</tr>
<tr>
<td>inSkate- all for ice skating</td>
<td>Figure skating moves and skills (has videos)</td>
<td>is the first unique Mobile App to teach you how to figure skate. If you are a figure skating coach, an active skater, a parent or just a figure skating fan and want to improve your skating skills, find useful technical advice; learn some of the secrets from TOP level elite figure skaters, is ready to guide you towards your figure skating goals. All our skating team is focused on your improvement in -Basic steps -Figure skating stroking skills -Jumps -Spins</td>
</tr>
<tr>
<td>Moves in the field</td>
<td>Figure skating moves and skills (has videos)</td>
<td>Easily access pattern videos, diagrams, focus points, test expectations, exercises, common errors and corrections, instruction on placement and technique, and slow motion videos. Quizzes for each level are available. Learn all moves in the field turns on the turns page of the app which includes: breakdown of each turn technique, slow motion videos of each turn, and on ice drawings of turn tracings.</td>
</tr>
<tr>
<td>Balanced Skaters by Angela</td>
<td>Off-ice training program</td>
<td>the cutting edge of off-ice training for figure skating coaches. Before downloading this app, you'll need a BSP Coaching username and password. The Balanced Skaters Platform makes world-class training techniques &amp; knowledge accessible to everyone. Our programs are designed to help coaches &amp; trainers of all levels teach their students targeted exercises that are proven to improve strength, flexibility, and resilience on the ice -giving them a long-term competitive edge. Coaches who are approved to join the Balanced Skaters Platform get exclusive access to our app.</td>
</tr>
<tr>
<td>Figure skating Practice Assist</td>
<td>Record book / scoring system</td>
<td>As a coach you can: Add your skaters to the connection list; Create and update programs for your skaters; See, in detail, the progress based on the base value of different elements from a program. As a skater you can: Add coaches and skaters to your connection list; Observe your overall performance; See, in detail, the progress based on the base value of different elements from a program. It does not matter if you are a coach, professional skater or just a casual skater, SkateNotes, is the app that will help you push your limits.</td>
</tr>
<tr>
<td>Edge exercise</td>
<td>Figure skating skills</td>
<td>Whether you are new or have mastered the eight figure skating edges, this app is for you! The app randomly generates edges, turns, and exercises, so that you can create thousands of different unique edge sequences.</td>
</tr>
<tr>
<td>Sk8coachFree</td>
<td>Find a coach</td>
<td>Find local skating coaches in your area</td>
</tr>
<tr>
<td>Dance</td>
<td>Figure skating moves and skills</td>
<td>The Dance 1-6 app focuses on the components of ice dancing and reviews the basic edges &amp; turns, all while skating to music. Skaters will complete the first 6 compulsory dances, which can then be tested solo or with a partner.</td>
</tr>
<tr>
<td>ISA tests</td>
<td>Figure skating moves and skills (has videos)</td>
<td>Learn about Ice Skating Australia's singles tests, dance tests, and pair tests. Easily access videos, music, test papers, and diagrams for all Ice Skating Australia Tests.</td>
</tr>
<tr>
<td>Scale of values</td>
<td>Skating score system</td>
<td>Scale of Values presents all figure skating elements values for Single &amp; Pair Skating and Ice Dance. Updated to the last ISU Communication for Single &amp; Pair Skating and for Ice Dance (season 2019/20). For judges, coaches, skaters, parents and followers.</td>
</tr>
<tr>
<td>Axel Prep</td>
<td>Figure skating moves and skills (has videos)</td>
<td>The Skate Coach app series was designed to help skaters, parents, instructors and officials understand the standards set for the Basic Skills for learning how to do an Axel Jump</td>
</tr>
</tbody>
</table>
| MyUSAGym | USA Gymnastics app | myusagym is the best way to follow gymnastics competitions on all levels, from invitationals to national championships.  
- Find upcoming competitions.  
- Follow meets live with rosters, schedules and results.  
- Review results from past competitions.  
- Follow your favorite athletes, both friends and well known.  
- Keep up on the latest gymnastics news. |
| MLB official app | Major league baseball official app | The MLB App is the #1 destination for live baseball video and audio served directly on your iOS device. Watch and listen live or on-demand! |
| Freezio figure skating 3D app | Figure skating moves and skills (has videos) | Freezio offers you more ways to fall in love with figure skating. It is a FREE application designed to help both young or adult skaters, parents and coaches understand the standards set for jumps in figure skating using high definition 3D models. Freezio is here to help you regardless of your experience. The 3D and AI technologies are brought together in Freezio to unleash your full potential. Our application shows up as a personal assistant with figure skating elements to help you organize, study, improve your training and get better on the ice rink. |
| Skating is for everyone | Record Book | An app with a library of over 50 figure skating elements and tips and tricks written and recorded by trained figure skaters. You can also fill out a virtual lesson request form! You can also learn more about the non-profit organization Skating is For Everyone LLC. |
Appendix B: Prototype

https://www.figma.com/proto/A71WK8vAOqIOnqninagQna/USFSA-APP?node-id=9675%3A26&scaling=scale-down&page-id=32%3A192&starting-point-node-id=9675%3A26
Appendix C: Cataloging Worksheet

Author: Jessica Krenzel
Title: Mobile Application development for the United States Figure Skating Association
Keywords: App, App Development, ios, Mobile Devices, Mobile applications, Figure skating
Vita

Jessica Krenzel  
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EDUCATION

State University of New York at Polytechnic Institute, Utica, NY  
Masters of Science in Information Design and Technology  
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State University of New York at New Paltz, New Paltz, NY  
Bachelor of Arts in Digital Media Production and Communication Studies, concentration Public Relations  
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Riverdale kingsbridge Academy  
High school diploma  
May 2015

PROFESSIONAL EXPERIENCE

LZ Technologies, Houston, TX  
DOCS Learning Lab Video Producer

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Digital Media Intern

BronxNet Television, Bronx, NY  
Video Editor Intern