



July 3, 2020

Calvin Cheng, Polina Chzhan, Rollin Poe & Cameron Swanson

## Evaluating FIFA Mobile's Onboarding for Player Affect and Learnability



# Table of Contents

## 03 Introduction

## 04 Study Methodology

*Participants* 04

*Method* 04

*Data Collection* 05

*Validity* 05

*Questionnaires* 06

*Data Analysis* 06

## 08 Results

## 13 Discussion and Conclusions

*Analysis* 13

*Design Recommendations* 13

## 19 Appendices

*Appendix 1* 19

*Appendix 2* 20

# Introduction

FIFA Mobile is a football (soccer) video game developed by Electronic Arts (EA) Canada for mobile devices. It features over 17,000 football players across 700 clubs in 30 different leagues that users can play with (Electronic Arts Inc., 2019). Gameplay involves building and upgrading an ultimate team, competing in matches against friends as well as online players to climb leaderboards, and participating in live events that align with real world football events (Electronic Arts Inc., 2019). In-game currency can be used both to train players and unlock new players in random card packs, and can be earned through gameplay or micro-transactions.

EA's goals are to recruit new players, increase long-term player engagement, and convert non-spenders into spenders. They identified the **lengthy onboarding process** as a potential pain point for new players and have conducted an initial usability study on it. However, EA is interested in understanding a **player's holistic experience** from the onboarding process, which includes a detailed understanding of **players' affects** during onboarding and their **learnability** of key in-game elements. This study addresses EA's needs by evaluating FIFA Mobile's onboarding process using a mixed-method approach, consisting of an **affective evaluation** and an **usability assessment** of gameplay elements and currencies. The findings from this study are used to create redesign recommendations that provide a more enjoyable and effective product for novice players while increasing revenue for EA.

# Study Methodology

## *Participants*

Young male football fans are the broad target demographic for FIFA Mobile, and this study focuses on a sub-group of this demographic: Young male football fans who have played FIFA on other platforms. **10 Canadian male participants** were recruited, **aged 18-25 (mean = 22.6)** who had an **interest in football, had prior experience playing FIFA (i.e. console and PC)** and **have not played FIFA Mobile**. Only 10 participants were necessary for testing, as the affective method used in this study could sufficiently capture a diverse range of player feelings and identify trends among participants (Nielsen, 1994).

## *Method*

The usability field study was conducted remotely through 10 separate Zoom calls, each consisting of one participant and one facilitator. All calls lasted approximately 1 hour. Participants were asked to situate themselves in a part of their home where they would normally play mobile games, encouraging realism. A pilot study was conducted with one participant prior to conducting all other testing sessions to determine areas of improvement for the study's design. The pilot study's data was excluded from the report as certain elements of the questionnaires and tasks were modified after the pilot study.

**[Step 1 - Pre-Play Questionnaire]:** The participants were first sent a link in the chat to the online Pre-Play Questionnaire with the informed consent form embedded into it. The questions were to gauge the participant's background, experience with FIFA, and initial impressions of gameplay elements such as the layout of the main menu and the various forms of in-game currency. This would be used to extract an initial conceptual model (*10 minutes*).

**[Step 2 - Play Session with Think Aloud]:** Following the first questionnaire, each participant was tasked to play through the mandatory onboarding stages (Introduction with Celebrity Football Player Eden Hazard, Shooting the Ball, Passing the Ball, Swapping Players on a Team Roster, Dribbling the Ball, Defending the Ball, Training a Player, Playing an Official Match, Completing a Quest, Redeeming a Pack in the Store, and then starting the World Tour Missions). The facilitator prompted the participant to talk about their actions, thoughts, and feelings through a think-aloud technique where the participant's mobile screen and audio were recorded locally which the participant sent to the facilitator for further data analysis, as well as audio backup being recorded through Zoom. Participants were asked to make specific mention of their current affective state and indicate any problems they felt they were facing in order to evaluate affect and learnability. To respect participants' time, the research team elected to code comments from the think aloud, rather than engaging in a formal cued-recall debrief (*40 minutes*).

**[Step 3 - Post-Play Questionnaire]:** Upon completion of the onboarding tasks, an online Post-Play Questionnaire was sent as a link in the chat to evaluate the transfer of knowledge for learnability from the onboarding and gauge a formative conceptual model of the in-game elements which the findings from the pre-play questionnaire were compared against (*10 minutes*).

## Data Collection

Questionnaires were delivered through the online survey administration tool Google Forms to collect a mix of **quantitative** and **qualitative data** to measure learnability. For learnability, we collected the participant's Likert-scale rating of confidence for the main in-game skills and their perceived value rating of currencies. **Qualitative comments** were extracted from the open-ended questions about the currencies to support a conceptual model of the currency system. The participant's in-game screen and audio were recorded during the session through the participant's default mobile screen recorder as well as through Zoom which was transcribed into **qualitative, textual transcripts** using Otter and manually coded into learnability themes as well as affect types.

## Validity

**Face validity** was ensured as the study measured player experience (affect) and usability (learnability) of onboarding from an initial glance at the study. Holistic experience consists of user's affect (positive and negative valence), overall usability issues throughout onboarding (learnability), and self-reported confidence/knowledge in understanding (learnability). These measures contributed to maintaining **construct validity**. **Content validity** was maintained by modeling the pre- and post-play questionnaires after relevant confidence questions from the System Usability Scale (Sauro, 2011). The present study does face concerns over ecological validity. First, all participants played the entire tutorial in a single gameplay

session at their home which may not be wholly representative of all players' experiences, as mobile games are often designed to be enjoyed in rapid gameplay sessions, often on the go. Secondly, while young, male football fans were mentioned by EA as a core demographic, our participant group did not entirely align with the tweens and teens demographic (frequently from countries with larger football engagement) that were identified. Furthermore, while young males are the largest user group, they are far from the only demographic playing FIFA Mobile. **External validity** may fail to generalize to the variety of demographics. Thirdly, all participants in the study had experience playing FIFA games on other platforms. These players are of special interest to EA as they are people who already engage with the products on offer and may be more likely to be engaged players with the mobile product. However, this experience with FIFA brings with it biases on foreknowledge of how a FIFA game works, and is not representative of players with no prior experience with FIFA games. Other validity concerns are that participants were asked about the currency system in the questionnaires which may bias the frequency of comments and prime participants to be more aware of currency during onboarding, however, this is not believed to affect the validity of the findings as the overall proportion of participants did not understand the gameplay currency.

## *Questionnaires*

The questionnaires were designed in a reverse funnel format with the questions grouped by simple to complex, by topic, and concrete to abstract with a range of Likert-scale, rank-order, open-ended, and closed questions. The Likert-scale questions were designed on a scale of 1 to 7. The pre-play questionnaire gathered information about the participant's background asking them about their experience with playing FIFA, current video game playing behaviours, and initial impressions of the main menu and currency system. Mirroring similar questions from the pre-play questionnaire, the post-play questionnaire asked the participant to rate their confidence (learnability) in learning specific gameplay techniques taught during the tutorial (dribbling, shooting, upgrading players, etc.), and revisited the questions of rating their perceived value of the in-game currency system now that the participant had better working knowledge of the game. An open-ended response question was also included to capture any errant thoughts the participants had which were not brought up during the think-aloud or questionnaires. Sample questionnaires can be found in Appendix 2.

## *Data Analysis*

### *Coding Thematic Analysis*

Participant comments were coded to reveal **key themes** of learnability concerns while matching them to the main **high valence and low valence themes** exhibited by the participant during the think aloud at each of the 11 substages of the onboarding process. From the textual transcript extracted from each session, the data

analysts broke down the transcript into the substages and noted down each affective comment or usability concern mentioned as well as the timestamp for each. Each comment was then grouped into categorical themes (e.g. frustration, enjoyment, lack of control, etc.). The total number of each affect and proportion of participants reported feeling the affect were noted (found in Appendix 1). The open-ended questions from both questionnaires were likewise coded to provide textual support. **Reliability** was ensured in the subjective findings by having two independent evaluators use similar coding types, code separately, compare the findings, and resolve any major discrepancies with the themes.

### Statistical Relationship Analysis

Data from the pre-play and post-play questionnaire was compared to measure the central tendency and dispersion differences across Likert-scale questions. Participants' learnability of in-game skills and their conceptual model of in-game currency was analyzed. Questionnaire analysis is in Appendix 1.

## Results

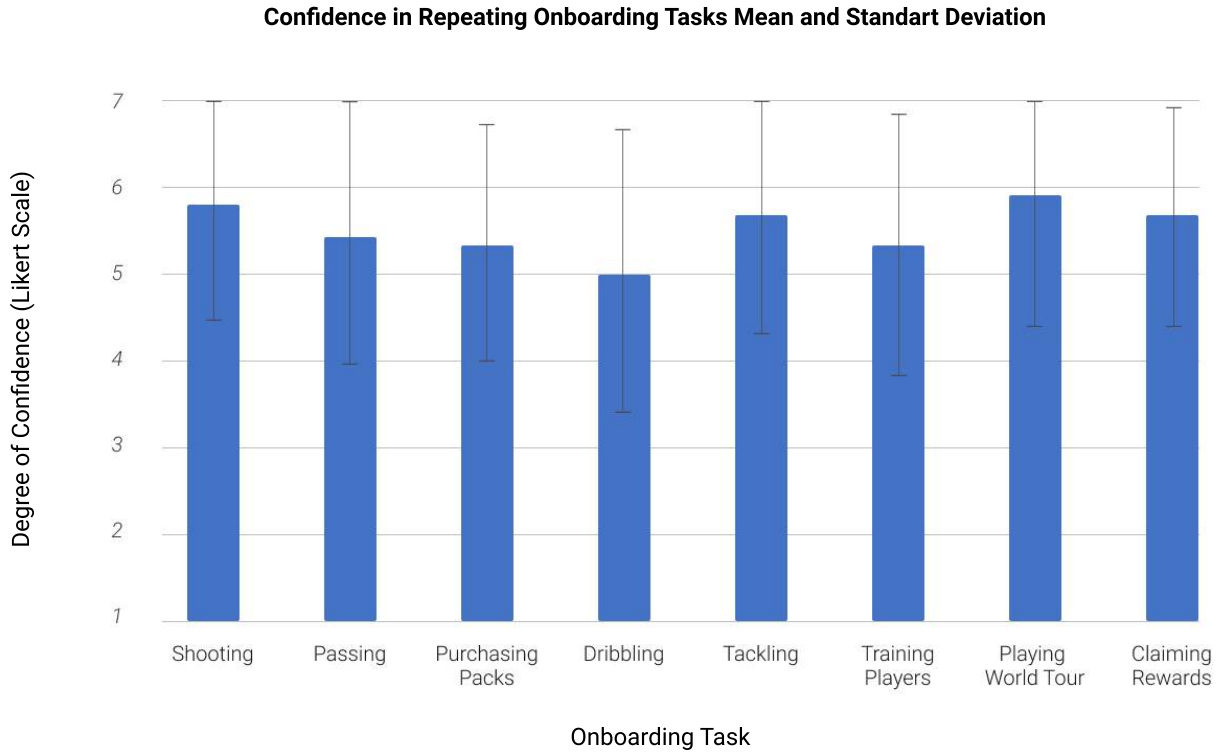
For the qualitative coding of the think aloud data, we uncovered **three main themes** which is rooted in reliable findings as the correlation coefficient is larger than 0.9 ( $R = 0.97$ ): **restricted player autonomy and freedom** as participants felt frustrated that the onboarding restricted their ability to freely explore the game particularly at the dribbling and store substages of the onboarding; **visual and interaction disconnect between the FIFA Mobile and FIFA Console experiences** which included currencies as well as in-game controls; and **confusion surrounding the currency system** as participants expressed that they did not understand the types of currencies that were awarded in each stage of the onboarding and how these affected their gameplay. An in-depth player affect journey map can be found in Figure 1.





Figure 1: Player Affect Journey Map from Think Aloud Sessions

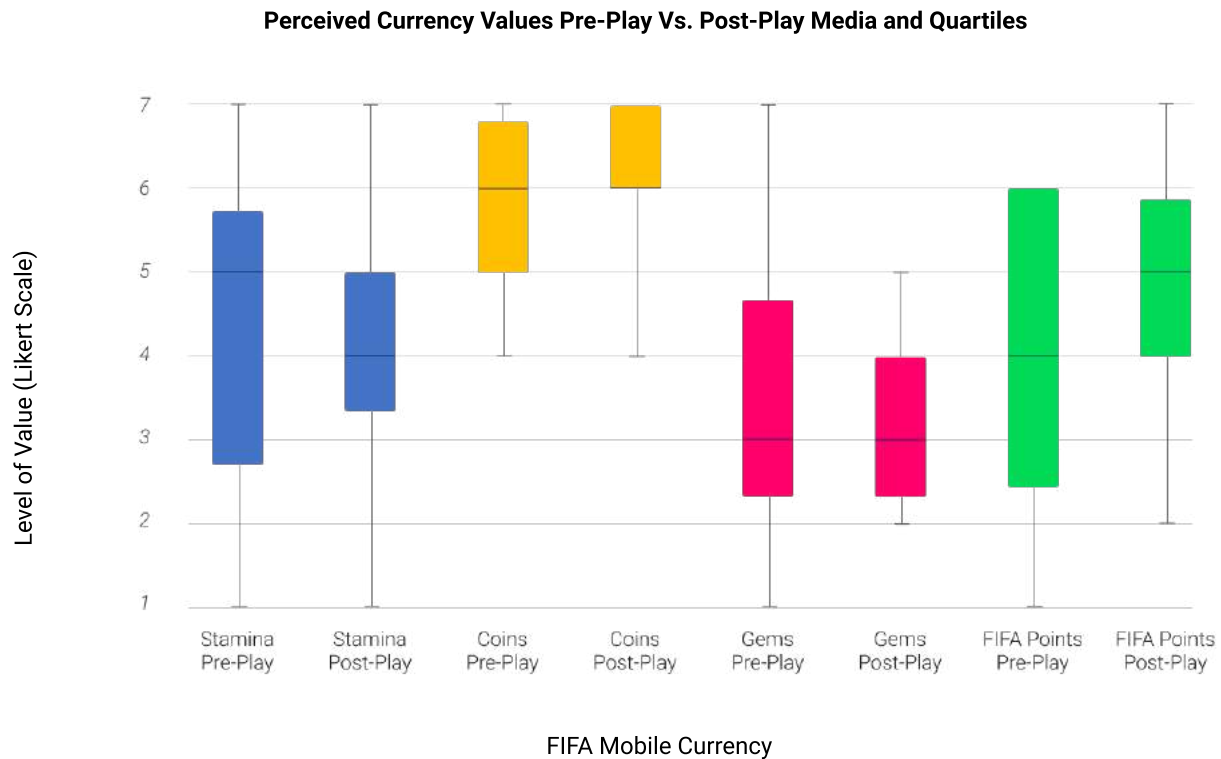
Data from the post-play questionnaire revealed that participants had **moderately-high confidence** in their ability to perform the various gameplay mechanics taught in the tutorial ( $M = 5.5, SD = 1.5$ ), indicating a relatively high transfer of knowledge and therefore learnability. A compared bar chart can be found in Figure 2.



Participant	"I am confident that I know how to shoot the ball."	"I am confident that I know how to pass the ball."	"I am confident that I know how to purchase a pack."	"I am confident that I know how to dribble."	"I am confident that I know how to tackle."	"I am confident that I know how to train a player."	"I know how to play a game in the World Tour."	"I am confident that I know where to view and claim rewards."
1 - Pilot	7	7	7	7	7	7	5	6
2	6	6	6	7	2	4	4	5
3	7	7	7	5	5	7	6	7
4	6	3	4	4	5	5	2	2
5	6	6	6	4	6	4	7	7
6	7	7	7	6	7	7	7	7
7	3	7	7	5	7	7	6	6
8	6	5	5	6	4	5	7	7
9	4	2	2	5	4	7	4	5
10	6	5	5	3	4	4	5	6
11	5	5	5	7	4	5	6	7
<b>Mean</b>	5.727272727	5.454545455	5.363636364	5.636363636	5.636363636	5.363636364	5.909090909	5.636363636
<b>Standard Deviation</b>	1.272077756	1.694912173	1.361816968	1.61245155	1.361816968	1.56698904	1.513574937	1.286291357

Figure 2: Descriptive Data Chart and Table of Learnability of In-Game Skills

Comparing the data from the pre- and post-play questionnaires for the relative values for each in-game currency revealed that currencies that were used during the tutorial were ranked as more **highly valuable** than those that were not. For example, coins were most frequently rated as the most important in-game currency post-play compared to their ranking in the middle of the pack pre-play. Coins, likewise saw a jump in their Likert response score to the prompt “The FIFA coins currency is very valuable” ( $M_{pre} = 5.45, SD_{pre} = 1.51; M_{post} = 6.18, SD_{post} = 0.98$ ). Compare this, to gems, which had minimal exposure, saw their average ranking fall to least valuable in both the pre- and post-play questionnaire. A detailed boxplot can be found in Figure 3.



"The Stamina currency is very valuable."				"The FIFA Coins currency is very valuable."				"The Gems currency is very valuable."				"The Fifa Points currency is very valuable."				
Participant	Pre-Play Rating	Post-Play Rating	Difference	Participant	Pre-Play Rating	Post-Play Rating	Difference	Participant	Pre-Play Rating	Post-Play Rating	Difference	Participant	Pre-Play Rating	Post-Play Rating	Difference	
1 - Pilot	7	7	0	1 - Pilot	6	7	1	1 - Pilot	5	7	2	1 - Pilot	4	4	0	
2	2	3	1	2	5	4	-1	2	1	4	3	2	2	3	5	2
3	2	1	-1	3	5	6	1	3	1	2	1	3	2	2	0	
4	5	5	0	4	7	7	0	4	2	2	0	4	5	6	1	
5	5	5	0	5	6	7	1	5	7	2	-5	5	6	4	-2	
6	5	4	-1	6	7	7	0	6	5	5	0	6	6	7	1	
7	6	4	-2	7	6	7	1	7	7	5	-2	7	3	7	4	
8	4	4	0	8	4	6	2	8	3	4	1	8	6	5	-1	
9	7	7	0	9	7	6	-1	9	3	3	0	9	6	5	-1	
10	1	3	2	10	2	5	3	10	3	3	0	10	1	1	0	
11	6	6	0	11	5	6	1	11	3	3	0	11	2	4	2	
<b>Mean</b>	4.55	4.45	-0.09	<b>Mean</b>	5.45	6.18	0.73	<b>Mean</b>	3.64	3.64	0.00	<b>Mean</b>	4.00	4.55	0.55	
<b>Standard Deviation</b>	2.07	1.81	1.04	<b>Standard Deviation</b>	1.51	0.98	1.19	<b>Standard Deviation</b>	2.11	1.57	2.10	<b>Standard Deviation</b>	1.90	1.86	1.69	
<b>Median</b>	5	4		<b>Median</b>	6	6		<b>Median</b>	3	3		<b>Median</b>	4	5		

Figure 3: Median Boxplot Chart and Table Comparison Between Various FIFA Mobile In-Game Currencies

The first parallel theme across both methods found players expressing that the **onboarding process was frustrating** due to the **pacing and desired for more control over the tutorial process**. Over **5 out of 10 participants** were frustrated as the **onboarding felt too restricted and long to learn the in-game skills**.

*"Oh...it looks like I can play a game. Never mind, it is telling me to do something else."*

*- Participant 9, Aged 24*

*"Lowlight was having to tap through and wait for the tutorial to load. Felt like it took 10 minutes longer than it should have."*

*- Participant 6, Aged 24*

The second parallel theme uncovered that more than **5 out of 10 participants** during the gameplay session and in the post-play questionnaire revealed **confusion over the currencies and what they were used for**.

*"I'm gonna [now] check out what stamina does. What? It took me to the store. Tell me what it does. How do I find out what this does?!"*

*-Participant 3, Aged 19*

# Discussion and Conclusions

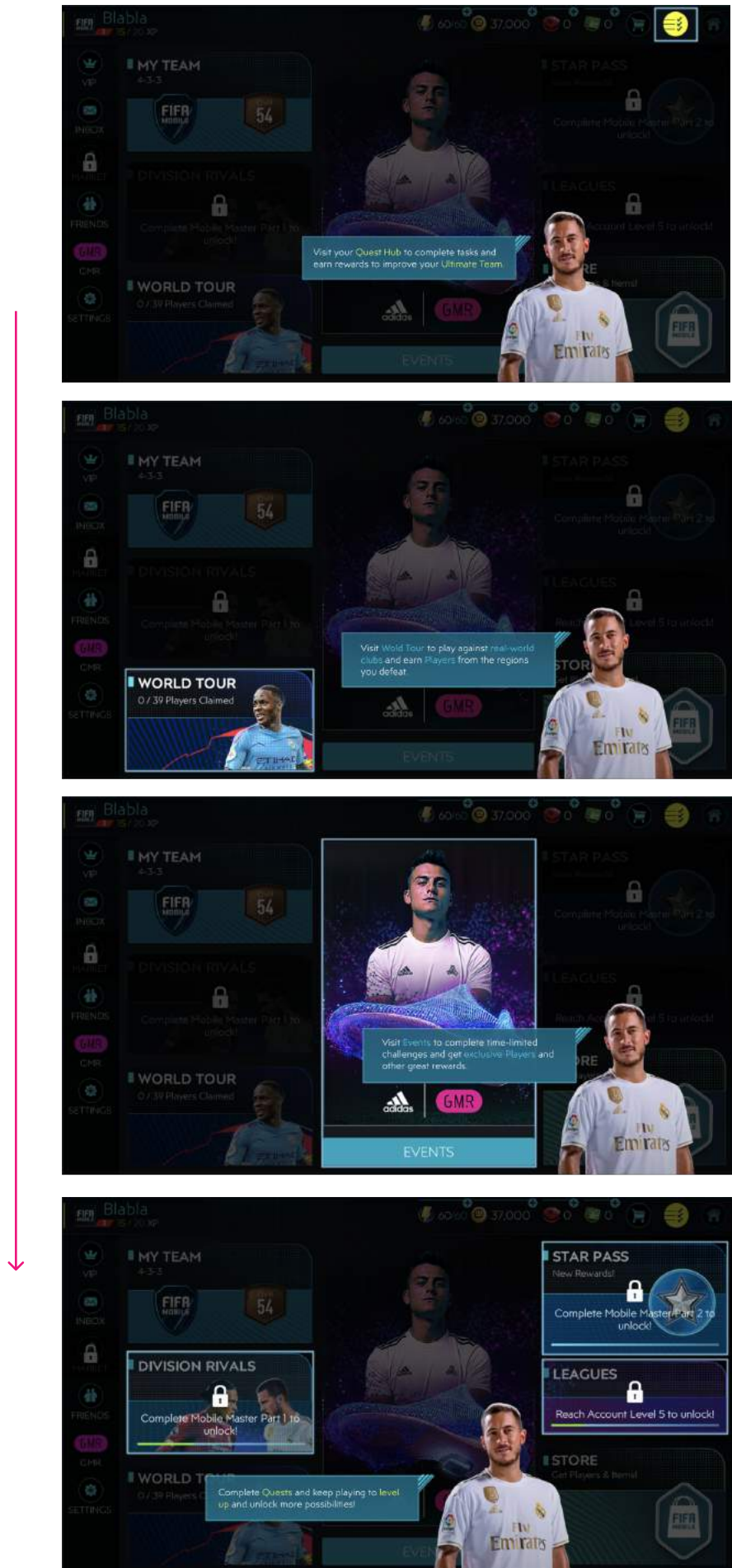
## *Analysis*

The results show a need to change the **perception of player freedom and pacing during onboarding** to positively impact **player affect and learnability** as well as **improve understanding of the currency system**. The onboarding's overall restrictive, compacted structure that necessitates players constantly entering and exiting gameplay, with little sense of progressive challenge contributes directly to the perceived lack of freedom. The frequent gameplay stops and starts likely led to increased textbox mashing, which in turn meant players were not reading and therefore not learning key gameplay elements, increasing frustration and decreasing learnability. While currency is both awarded and used during the tutorial, players' preconceived notions from previous FIFA games greatly impacted how they believed the system to work and the lack of explicit messaging left players with unclear understandings of each currency and how they related to each other.

## *Design Recommendations*

For redesign recommendations, we propose EA to incorporate **several incremental design changes** along the onboarding process to minimize disruption to the intentional gameplay flow. To tackle the theme of restricted player freedom, we recommend using **visual cues** to highlight areas of free-roam exploration for the player on the main menu (i.e. Quests, World Tour and Events) to open up the game and ultimately encourage the player to **freely discover in-game content**. Mockups of the interface redesign can be found in Figure 4 and so on.

Figure 4. Theme #1: Lack of Player Freedom & Autonomy (Free-Roam Exploration using Visual Cues)



Participants **skipped many dialogue boxes** and became prone to making errors that increased frustration. To aid error correction we recommend to add small **animated gestures** and the ability to **re-open dialogue boxes** as shown in Figure 5.



Figure 5. Theme #1: Usability Issues to Reduce Frustration with Time-Consuming Onboarding Process (Visual Iconography and Ability to Bring Back Objective Box)

Further, **condensing the 4 mechanic stages** (i.e. shooting, passing, dribbling and defending) **into 2 stages** may help reduce the **initial perception and frustration behind a time-consuming onboarding process**. Mockup of the interface redesign can be found in Figure 6.

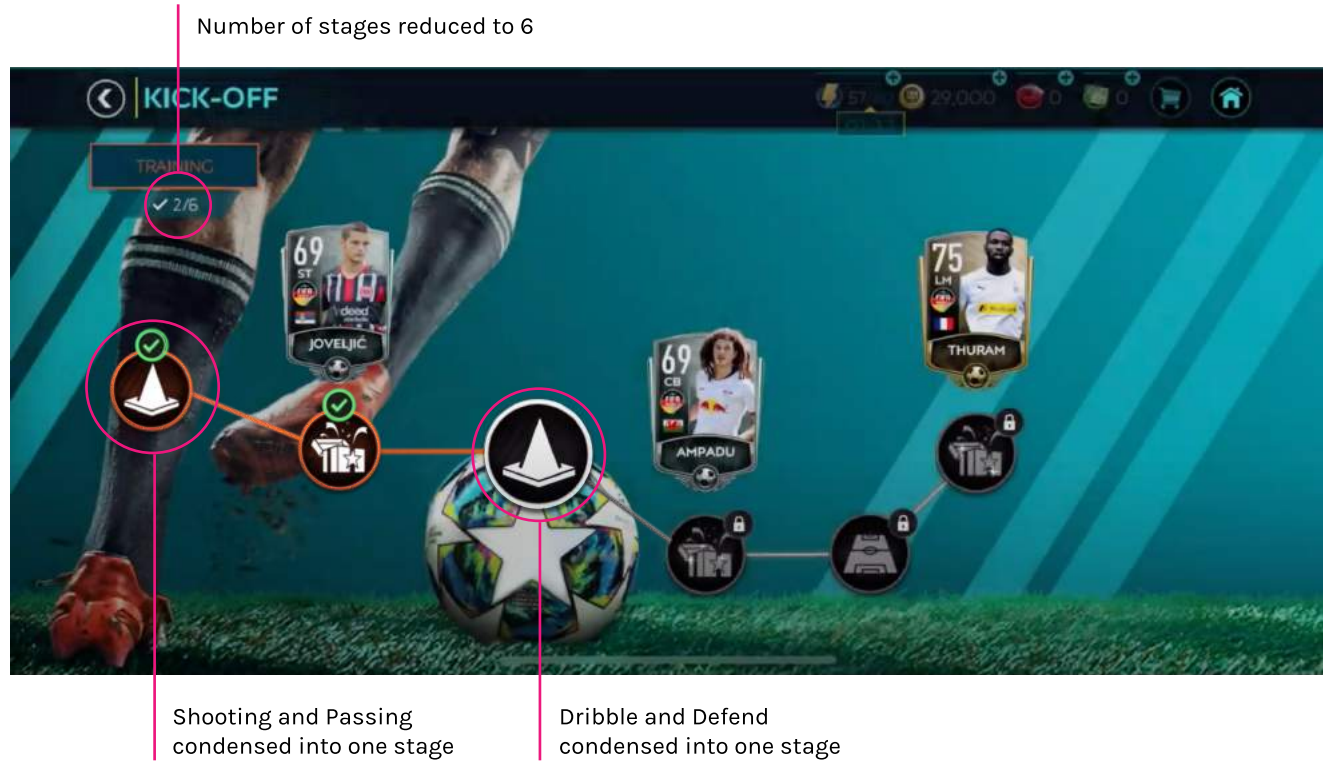
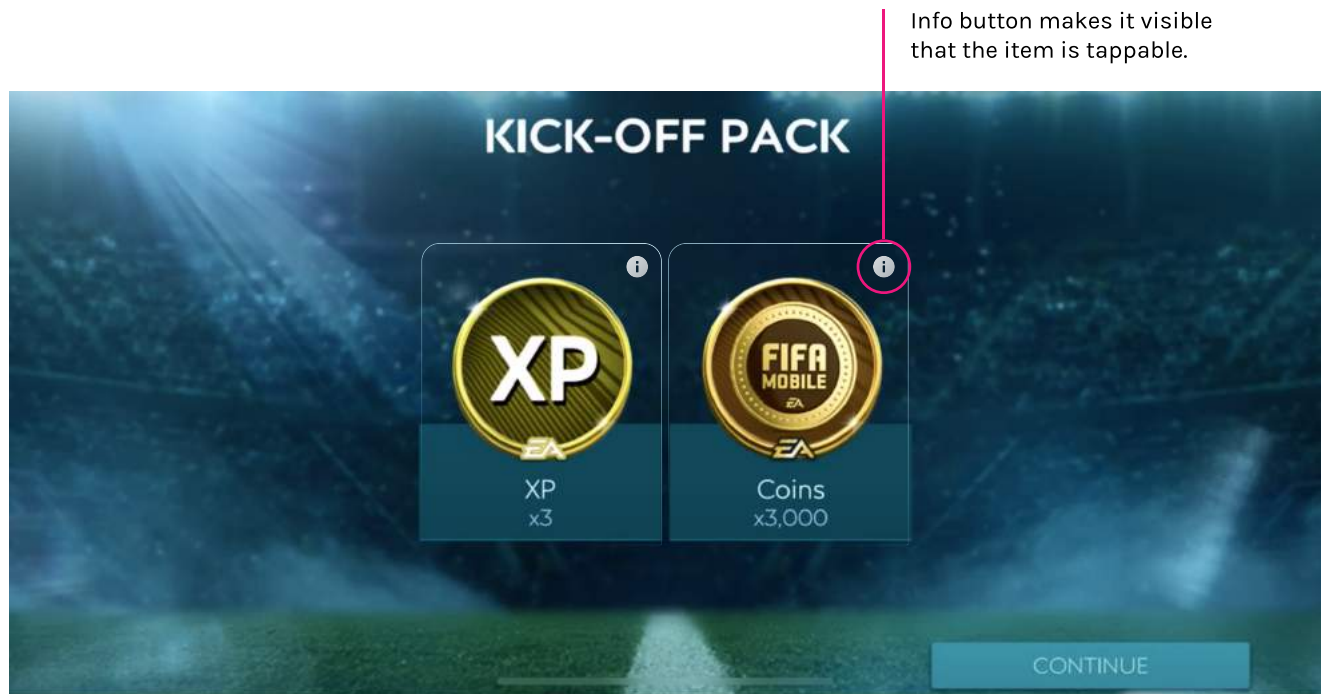


Figure 6. Theme #1: Time-Consuming Pacing of the Onboarding (Condensing Mechanic Stages)



For the second theme of currency confusion, we recommend using **fixed headers** in the store and **informational pop-up boxes** as shown in in Figure 7 to explain the benefits of currency to **increase their knowledge about the currencies and future likelihood of microtransactional purchasing behaviour**.



Information for each currency in store

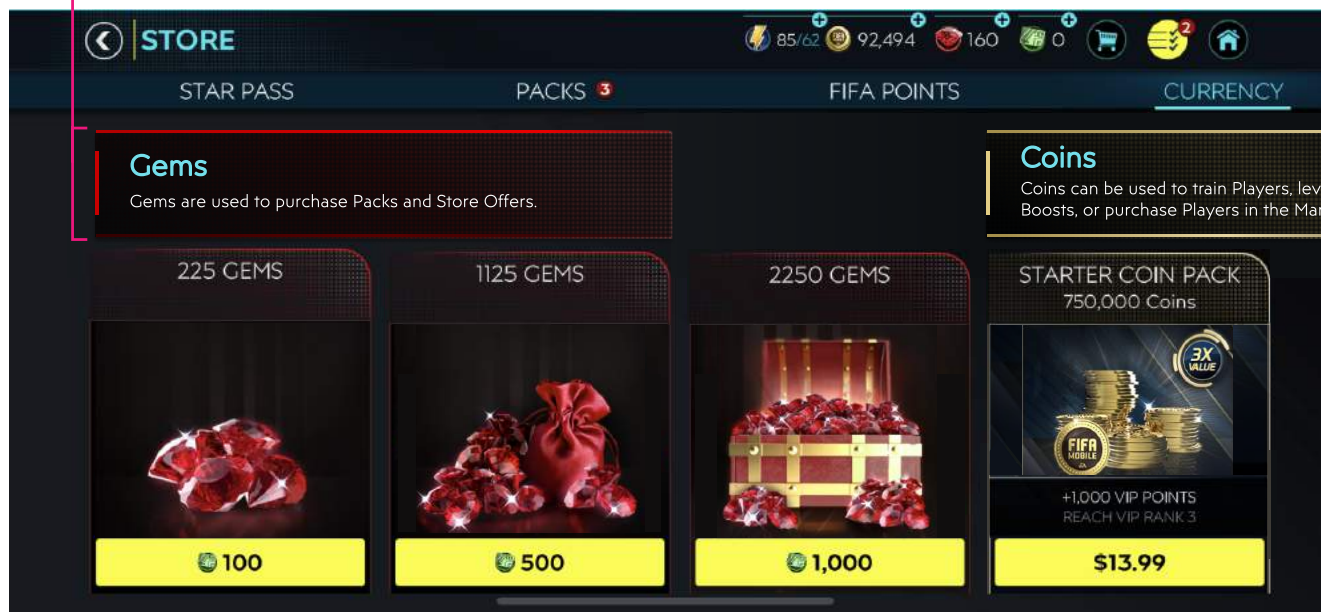


Figure 7. Theme #2: Improve Understanding of Currency System (Informational Boxes and Fixed Headers)

Further, this can be bridged to actual purchase by adjusting the contents of the purchasable Welcome Bundle sent to players by using **currencies that experienced FIFA players are familiar with** or ensuring that **currencies in the bundle are introduced during onboarding**. Mockup of the interface redesign can be found in Figure 8.

Including only familiar to the player currencies and rewards in purchasable welcome bundle



Figure 8. Theme #2: Improve Understanding of Currency System to Increase Likelihood of Player Conversion Rate (Tailored Welcome Bundle)

# Appendices

## *Appendix 1 - Raw Data: Audio Transcripts and Survey Data*

Raw Transcript Data, Think Aloud Comments and Analysis

[https://docs.google.com/spreadsheets/d/1bGTQxY80Dv3osKd\\_Hvlq24RLGLCLNGxq48MFAJYambQ/edit?usp=sharing](https://docs.google.com/spreadsheets/d/1bGTQxY80Dv3osKd_Hvlq24RLGLCLNGxq48MFAJYambQ/edit?usp=sharing)

Pre-Play Questionnaire Raw Data

[https://docs.google.com/spreadsheets/u/1/d/1k\\_Hh1b9ShKjdQEqA1JYnVU1isvat0wT2J4U66WEoMJ8/edit?usp=drive\\_web&ouid=105328161267268176592](https://docs.google.com/spreadsheets/u/1/d/1k_Hh1b9ShKjdQEqA1JYnVU1isvat0wT2J4U66WEoMJ8/edit?usp=drive_web&ouid=105328161267268176592)

Post-Play Questionnaire Raw Data

<https://docs.google.com/spreadsheets/d/169jOKpmqPlyzyVfQ1sVu8NUOgKUsRJSb9dXVlyZik9k/edit#gid=844654381>

Questionnaire Data Analysis

[https://docs.google.com/spreadsheets/d/1sGb4ywnU2nJgKqSAwSxaSKgxz3j\\_PIAxaZottjcYe0s/edit?usp=sharing](https://docs.google.com/spreadsheets/d/1sGb4ywnU2nJgKqSAwSxaSKgxz3j_PIAxaZottjcYe0s/edit?usp=sharing)

## *Appendix 2 - Pre-Play and Post-Play Questionnaires*

Sample Pre-Play Questionnaire

<https://forms.gle/B7qbiHEbUWWcu9jCA>

Sample Post-Play Questionnaire

<https://forms.gle/vVbhQYUgJmBJ2E1U6>