Tutorial Level Design Guidelines for 2D Fighting Games

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ABSTRACT

Fighting games can have barriers to entry as a result of the competency and skill needed to understand the mechanics and objectives of play. One of the key challenges in fighting game design is to teach players how to attain competency. The most common teaching strategy employed in many fighting games is to include a tutorial level. However, there is a lack of research on how fighting game tutorial levels should be designed to support learning for new players. In this paper, we propose design guidelines for video game tutorials, based on the Cognitive Theory of Multimedia Learning and video game design theory. We developed a fighting game tutorial, based on our design guidelines. We evaluated our design against a popular, recent fighting game, *Guilty Gear Strive*, in a user study with 10 players new to the genre. Our evaluation showed that our design improved on the in-game tutorial, in terms of supporting player learning. We also demonstrated that our design guidelines can provide useful insights into how to provide learning support in fighting game tutorials.

CCS CONCEPTS

• **Software and its engineering** → **Interactive games**; • **Applied computing** → **Computer games**; • **Human-centered computing** → **User studies**.

KEYWORDS

Design Guidelines, Game Design, Human Computer Interaction, User Study

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1 INTRODUCTION

Learnability, one of the five quality components of usability, considers how easy an interface is to learn to use [16]. Learning is the first significant interaction for users when exposed to a new system [27]. In video games, learnability design strategies aim to teach players how to play a game, including learning about the input system, game rules, and game world (e.g., lore and characters) [28]. The GameFlow model [31, 33–36] defines that being able to quickly learn how to play a game is a critical component of player enjoyment and that learning the game should be part of the fun. Engaging learnability design strategies have been used in video games since arcade machines became popular in the 1980s. For example, early arcade games (e.g., *Street Fighter 2* [6] and *Pac-Man* [26]) used idle time to run gameplay demonstrations to both educate and excite potential players. Since the 1980s, video games have become ubiquitous, more diverse, and often feature distinct mechanics within each genre. As a result, players' motivations when playing video games have also become more varied [39]. For example, some players seek to immerse themselves in the storytelling, while others are more focused on competing with each other or playing to relax. As such, game designers have employed various learnability design strategies to meet the unique needs of different players and games. Video game designers often use in-game manuals, tutorial levels, cutscenes, and diegetic clues to teach their players in a suitable design language [18, 32].

Despite the diversity in player motivations and game types, scholarly knowledge on player learning support in video games has not kept pace with the learnability design strategies that are rapidly evolving in commercial video games [28]. For instance, a tutorial level is often included in fighting games by game designers as part of their learnability design strategy. However, there is limited academic literature that investigates how a tutorial level for fighting games should be designed to support learning for new players. For a video game genre that is largely played in a one-player versus one-player setting [21], player enjoyment in fighting games can be hindered due to the overwhelming challenge players will face when paired with higher-skilled opponents. Accordingly, it is important to support learning for players in fighting games for the development of their skill and enjoyment. While it is common to include some sort of initial instruction, some newer fighting games (e.g., *Tekken 7* [30]) have omitted dedicated tutorials completely. Instead, they use an initial story mode as an instructional guide. The lack of empirical evidence on effective fighting game tutorial design and the variable approaches towards the inclusion of tutorials in games raises the question: **what design strategies best support player learning and increase new player competency in fighting games?** Our research seeks to address this research question.

To investigate our research question, we aimed to develop a design exemplar of a fighting game tutorial that focuses on supporting learning for new players. For this purpose, we created a set of design guidelines by mapping learnability theories from video game tutorial design to the Cognitive Theory of Multimedia Learning

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[24]. We employed our design guidelines to analyse a best-case fighting game tutorial, *Guilty Gear Strive* [4]. We then developed a universal fighting game tutorial based on our guidelines and our analysis of the *Guilty Gear Strive* [4] tutorial. Finally, we evaluated our tutorial design via a user study where participants played either our tutorial or the *Guilty Gear Strive* tutorial, before testing their skills in *Guilty Gear Strive* matches. Results from our user study suggested that our tutorial design provided better learning support for players compared to the tutorial level from *Guilty Gear Strive*. Further, our design also showed that existing learnability theories from general multimedia and video game design provide a good foundation for designing a fighting game tutorial that focuses on providing learning support for players.

2 RELATED WORK

Poretski and Tang [28] define a video game tutorial as being a well-defined level that explicitly teaches game mechanics with structured information delivery. The role of a tutorial is to help players learn the mechanics of a game. This means that the tutorial is often the first part of the game that players encounter [2]. Given that players need to have positive educational interactions with the tutorial, it is essential that the information presented can be easily accessed and understood by new players. In this section, we review previous research on learnability in video game tutorials, identifying key design factors of implicit versus explicit tutorials, context-sensitive instructions, surprises, segmenting, modality, and visual cues.

Depending on the video game, tutorial levels can be presented implicitly or explicitly. Implicit tutorials are tutorials that are integrated into the main part of the game. They are often low-risk initial levels that play just like the real game and count towards in-game progress. Conversely, explicit tutorials are tutorials that are separate from the main part of the game. They exist solely for the purpose of education and finishing these tutorials often does not contribute towards any in-game progress. In many fighting games (e.g., *Dragon Ball Fighterz* [3], *Skullgirls* [19]), the tutorial level is presented explicitly.

Different ways of presenting tutorial instruction can impact player engagement and retention [2]. Frommel et al. [11] found that presenting tutorial instruction with context-sensitivity can positively impact player engagement. Context-sensitive instruction is provided just-in-time, as opposed to being presented as part of a block of initial information. Interestingly, when using context-sensitive instruction within tutorials, Frommel et al. [11] did not find any effect on player performance or immersion.

Them's Fightin' Herds [22] is an example of a fighting game that presented tutorial levels explicitly with context-sensitive guidance. The developers incorporated context-sensitivity by using AI-controlled characters that read user-inputs and perform various actions that surprise the player in the tutorial level. The game's use of surprises allowed it to mimic real fighting game match situations and add context-sensitivity to the tutorial. Andersen et al. [2] found that using a context-sensitive approach can lead to improved player engagement.

Adams [1] and Hiwiller [12] recommend segmenting explicit tutorials into smaller sub-tutorials to scaffold players based on their developing skill. Dunlosky et al. [8] argue that distributed learning across multiple sessions facilitates long-term retention of knowledge. *Guilty Gear Strive* [4] presents a demonstration of this approach. In this game, the explicit tutorial level is segmented into various sub-tutorials and tutorials are categorised based on their difficulty, so players can extend their skills when they are ready. Allowing players to access skills on demand in this way can empower players to take control of their own learning during the game and can lead to more enjoyable play [18].

Tutorial level modality is another factor that can impact a player's experience of a tutorial in terms of learnability, performance, and engagement [17]. Tutorial level modality refers to the mode in which guidance is presented (e.g., text, text with picture, text with spatial directions). Kao et al. [17] found that text with spatial directions is the best modality in terms of teaching video game controls, followed by text with picture, and text alone. Whittinghill and Herring [37] compared the effectiveness of a text-annotated and non-annotated tutorial level that teaches game controls. They found both modes to be equally as effective. Bouki et al. [5] found similar results, concluding that textual messages used in parallel with visuals distract subject's visual attention when both media convey different information. These findings suggest that when both media do not complement each other, it is not beneficial to display them together.

Adams [1] argues that game designers should use visual cues (colour glow, large arrows, or highlighted user interface elements) to help focus player attention in video game tutorials. Having a way to clearly orient the player is critical in instructional tasks, as player attention to the game is crucial when learning [37]. The inclusion of highlighted text, large arrows, and scaffolded guides enable players to focus their attention and to complete tutorials faster [29]. Shannon et al. [29] suggest that faster completion of essential tutorial elements can allow players to spend more time on learning and exploring other aspects of the game.

Previous research has investigated learnability theories in general multimedia and video games. However, there is a lack of research on how different learnability theories can be practically applied in fighting game tutorial design. Moreover, different fighting game tutorials apply different learnability theories with varying levels of success [13]. In order to apply and investigate the effectiveness of learnability theories in fighting games tutorials, we first need to organise and structure learnability theories into a usable framework specific to the fighting game genre. This framework will then be used to develop an exemplar fighting game tutorial.

3 TUTORIAL DESIGN

To develop a design exemplar of a fighting game tutorial that focuses on supporting learning for players, we followed a four step process. First, we developed a set of design guidelines based on the literature. Second, we analysed a commercial game tutorial level using the design guidelines. Third, we developed a new tutorial for a fighting game. Fourth, we evaluated our final design via a user study.

3.1 Design Guidelines

We used the Cognitive Theory of Multimedia Learning defined by Mayer [23] as the foundation for our design guidelines. This theory defines principles for effective learning design when using

Table 1: Cognitive Theory of Game Learning: proposed guidelines based on Mayer's principles mapped to video game theory.

Mayer's Principle	Video Game Theory	Proposed Design Guideline
Coherence	Concise information [25]	Information should be presented concisely
Signaling	Prominent visuals, visual cues or stencil [29, 37]	Prominent visuals should be used
Redundancy	Limit annotations [37]	User interface element annotations should be limited
Spatial and Temporal Contiguity	Context-sensitive guidance [2, 11]	Context-sensitive guidance should be provided
Segmenting	Break down tutorial into several smaller sub-tutorials [8]	Tutorials should be broken down into smaller sub-tutorials
Pre-training	Tutorial level descriptions [18]	Tutorial level descriptions should be provided
Multimedia	Include graphics together with text instruction [17]	Text and graphics should be used together for instructions
Personalisation	Use text in conversational style [1, 12]	Conversational style text should be used

multimedia. It has previously been used to design instructional videos [14] and video game tutorials [17]. We mapped the learnability theories from the literature on video game tutorial design to the principles outlined in the Cognitive Theory of Multimedia Learning. Our proposed guidelines, which we have called "Cognitive Theory of Game Learning" (see Table 1), are based on 9 of Mayer's principles, namely *coherence*, *signaling*, *redundancy*, *spatial and temporal contiguity*, *segmenting*, *pre-training*, *multimedia*, and *personalisation*. We excluded Mayer's principles of *modality*, *voice*, and *image*, as discussed in this section. We also combined two principles (*spatial* and *temporal contiguity*), giving a total of eight guidelines. We propose that our guidelines can be used to scaffold the creation of effective game tutorials.

Mayer's *coherence* principle identifies that people learn better when extraneous material is excluded rather than included. To follow this principle in multimedia presentation, Mayer [23] recommended that non-relevant information be excluded. This is also recommended in video game design [25]. Hence, our design guideline sets out that information in video game tutorials, such as instructions and guidance, should be presented concisely.

According to Mayer's *signaling* principle, people learn better when their attention is directed towards the material. Whittinghill and Herring [37] and Shannon et al. [29] both found that players' attention in video game tutorials is crucial in promoting learning. Therefore, we suggest that prominent visuals should be used in video game tutorials.

Based on the *redundancy* principle, people learn better with narration and graphics than with narration, graphics, and text together. Whittinghill and Herring [37] found that non-annotated user interface elements in tutorial instructions were as effective as the text-annotated version. They also found that unnecessary annotations can confuse players due to being unclear or redundant. Hence, to follow the *redundancy* principle in video game tutorials, user interface element annotations should be limited.

Both the *spatial* and *temporal contiguity* principles highlight the need to represent sequences of information in relation to each other. In multimedia presentations, text and graphics should be presented near each other. Meanwhile, narration and animation should be timed together [23]. In video game tutorials, presenting a sequence of information in relation to each other can be viewed as adding context to the overall information. Andersen et al. [2] defined context-sensitive guidance as textual help that appears close to elements, objects, or tools in the game. Also, Frommel et al. [11] defined context-sensitive guidance as textual help that appears just-in-time (e.g., when a new mechanic or interaction is unlocked). We mapped the use of context-sensitive guidance in video game tutorials to the *spatial* and *temporal contiguity* principles. The resulting design guideline for video games is to provide context-sensitive guidance.

The *segmenting* principle identifies that people learn better when lessons are presented in user-paced segments, rather than one long session. Dunlosky et al. [8] reported that distributed learning across multiple sessions contributes to long-term retention more than overloading information into a single learning session. In video game tutorials, we recommend that tutorials should be broken down into several smaller sub-tutorials.

Mayer's *pre-training* principle states that people learn more efficiently when they receive prior exposure to the basics. In multimedia presentations, prior exposure can be achieved by defining key terms before the main presentation. A similar approach can be achieved in video game tutorials by adding descriptions to the tutorial selection menu or loading screen. Providing level descriptions as prior exposure is also recommended by Kramarzewski and De Nucci [18]. Therefore, our design guideline recommends providing tutorial level descriptions.

According to Mayer's *multimedia* principle, people learn better from graphics and text than from text alone. As such, Mayer recommends that relevant images and graphics are used to illustrate key points. Kao et al. [17] found that video game tutorial instructions are best delivered with text alongside graphics, which supports this recommendation. Our design guideline recommends that text and graphics are used together when providing instructions.

We did not find any video game tutorial design research on the effect of the *personalisation* principle on player learning. However, the use of conversational style text is featured in video game design books [1, 12]. As a result, we recommend the usage of conversational style text, which is part of Mayer's *personalisation* principle.

We excluded three of Mayer's principles from our design guidelines, namely *modality*, *voice*, and *image*. *Modality* and *voice* were excluded as we found no literature to suggest that either impacted player learning in game tutorials. However, this could be an area

for future research. Mayer's *image* principle was not included in our mapping as there are very few games that use real human faces in their tutorials. As such, these principles were not included in our design guidelines or applied in our tutorial design.

3.2 Case Study: *Guilty Gear Strive*

In order to evaluate how current 2D fighting games use tutorials to teach players, we examined the tutorial in *Guilty Gear Strive* [4]. We used our proposed Cognitive Theory of Game Learning design guidelines to analyse the tutorial. At the time this research was conducted, *Guilty Gear Strive* was the latest game published in the fighting game genre. Moreover, the tutorial in *Guilty Gear Strive* has been praised by professional game reviews [9, 10, 38, 40] and is considered to be a best-case commercial fighting game tutorial. The *Guilty Gear Strive* tutorial also contains in-depth and extensive content that covers almost every universal fighting game mechanic. It provides a baseline for our analysis of fighting game tutorials and also acts as a comprehensive test case for our proposed design guidelines.

Guilty Gear Strive's tutorial is structured into five themes, each of which contains sub-tutorials grouped by difficulty. The themes range from basic universal fighting game mechanics to advanced and competitive high-level strategies. In total, there are 133 sub-tutorials across all themes. Every sub-tutorial in *Guilty Gear Strive* begins with an information page (see Figure 1), where players are briefed on the aim of the sub-tutorial and also the input buttons they need to use within the sub-tutorial. After the information page, the gameplay of the sub-tutorial begins. To successfully complete a sub-tutorial, players are tasked with correctly executing the sub-tutorial's required execution at least three times out of five rounds. For each successful execution of the completion requirement, the round is recorded as a win and congratulatory remark is given. Following the overall successful completion of the tutorial, players are debriefed on a final information page (see Figure 1).

By applying our design guidelines, we found that the *Guilty Gear Strive* tutorial fulfills six out of eight of the guidelines. First, the tutorial is segmented into multiple sub-tutorials and grouped based on difficulty (*segmenting*). Second, players are briefed through the information page presented before beginning their gameplay (*pre-training*). Moreover, the text presented on the beginning and debriefing pages are also accompanied by visual representations (*multimedia*). Phrases such as *"The better you are"* and *"Keep in mind"* are used to add a conversational tone to the text presented (*personalisation*). Furthermore, annotations are kept short in the tutorial through the use of symbols, where directional instructions (e.g., "back" and "down and back") are replaced with symbols representing a controller's directional input buttons. Together with simple direct instructions and information given in the tutorial, both *coherence* and *redundancy* have been fulfilled in the tutorial. From our analysis, two guidelines were not fulfilled in the *Guilty Gear Strive* tutorial design. The unfulfilled guidelines are *spatial and temporal contiguity* and *signaling*. Referring back to our design guidelines, two modifications are needed to address the remaining guidelines. First, the tutorial needs context-sensitive information

Figure 1: *Guilty Gear Strive* sub-tutorial start screen (top), gameplay screen (middle), and debrief screen (bottom).

delivery to satisfy the *spatial and temporal contiguity* guideline. Second, visual cues need to be incorporated in the tutorial gameplay to fulfil the *signaling* guideline.

4 TUTORIAL DEVELOPMENT

Based on our analysis of the *Guilty Gear Strive* tutorial, we developed a new universal fighting game tutorial, using Unity game engine version 2019 (see Figure 2). We replicated the overall design of the *Guilty Gear Strive* tutorial as the starting point for our tutorial. First, we replicated the sub-tutorial information page. In the information page, we placed the title of the sub-tutorial at the top of the screen. Below the title, we placed the information text that contains the aim of the sub-tutorial and helpful tips. Following the information text, we placed pictures to illustrate movements that players should use in the tutorial. The pictures were labelled along with the input buttons required for the movement illustrated. Also, similar to the reference design, we used actual button inputs to represent directions in the label, instead of annotating them. Second, we replicated the gameplay screen. Similar to the reference design, we placed the characters' health bars at the top right and left of the screen. In the middle of the health bars, we placed the timer for the tutorial. Under the right health bar, we placed the round marker, where "-" indicates that the round is not yet played, "X" indicates that the round is lost, and "O" indicates that the round

Figure 2: Our tutorial design, including segmentation into sub-tutorials (top), sub-tutorial beginning and debriefing screen layout (middle), and gameplay screen (bottom). Tutorial segmented into smaller sub-tutorials.

is won. Finally, at the middle right, we placed the completion requirement of the sub-tutorial. When a round won, a congratulatory remark is given at the middle of the screen.

4.1 Sub-Tutorial Selection

We selected three out of 133 *Guilty Gear Strive* sub-tutorials to use as test cases. The selected sub-tutorials cover fighting game mechanics, such as attacking, blocking, and neutral (spacing). According to Iyer [15], these mechanics are fundamental and universal in most games in the fighting game genre. Consequently, selecting these sub-tutorials means that our design is generalisable and applicable to other fighting games.

The attacking sub-tutorial covers the basic types of attacks available in most fighting games. The types of attacks are low-attacks and overhead attacks. Low attacks are attacks that hit the lower body of a character and can only be blocked while crouching. Meanwhile, overhead attacks hit the upper body and can only be blocked while standing. The aim of the attacking sub-tutorial is to teach these properties and the situations in which they are required to be used. In *Guilty Gear Strive*, this is done by instructing the player to attack a static blocking opponent. The attacking sub-tutorial in *Guilty Gear Strive* and our adapted version are shown in Figure 3.

The blocking tutorial teaches the two different types of blocking options in fighting games. The two types of blocking options are crouching block and standing block. Crouching block means to block while in crouching position, while standing block means to block in a standing position. The aim of this sub-tutorial is to teach which type of blocking option the player should use to match the

Figure 3: Attacking sub-tutorial in Guilty Gear Strive (top) and our tutorial (bottom). Players are instructed to land a low attack on an opponent who is stand blocking.

Figure 4: Blocking sub-tutorial in Guilty Gear Strive (top) and our tutorial (bottom). Players are tasked with blocking a series of random low-attacks and overhead attacks.

attack type used by the opponent. In the sub-tutorial, this is done by having the player block a series of low-attacks and overhead attacks while not getting hit. Figure 4 shows the blocking sub-tutorial from *Guilty Gear Strive* and our adapted version.

The neutral tutorial is about teaching players proper spacing and how to begin their offence in a fighting game match. In the *Guilty Gear Strive* neutral sub-tutorial, this is taught by having the players attack an approaching opponent using the attack with the longest range in their arsenal. In fighting game lingo, this is called *"placing pokes"* or *"poking"*. The neutral sub-tutorial from *Guity Gear Strive* and our adapted version are shown in Figure 5.

4.2 Modification: Visual Cues

In order to satisfy the *signalling* guideline, which we identified as lacking from the *Guilty Gear Strive* tutorial, we incorporated visual cues into our tutorial design. To do this, we followed the

Figure 5: Neutral sub-tutorial in Guilty Gear Strive (top) and our tutorial (bottom). Players are tasked with "placing a poke" in order to stop an approaching enemy.

visual cues design framework set out by Dillman et al. [7]. This framework describes visual cues along three dimensions: *purpose*, *markedness*, and *trigger* source. *Purpose* describes the utility of the cue, *markedness* describes the visual design of the cue, and *trigger* describes the situations in which the cue is shown.

A visual cue's Purpose can be to guide the player to:

- **Discover**: Informs the player of objects or points of interest in the environment.
- **Look**: Informs the player where to put their visual attention in a timely manner.
- **Go**: Provides navigational assistance through environment.

A visual cue's Markedness can be:

- **Subtle**: The cues blends into the environment seamlessly.
- **Emphasised**: An object or surface in the environment is highlighted.
- **Integrated**: A "virtual" object is added into the environment, tracked by the view port.
- **Overlaid**: Virtual objects are added atop the view port, and do not track the view.

A visual cue's Trigger can be:

- **Player**: The cue is activated by an explicit player action.
- **Context**: The cues is activated by some implicit player action.
- **Other/Agent**: The cues is activated by some other agent (system or other player).
- **Persistent**: The cue is always visible.

In terms of purpose, we selected *Discover* and *Look* from the framework as the purposes of our visual cues. The *Discover* purpose is to help inform beginner players where they should be focusing their attention on the screen. This is because fighting games are fast-paced, so beginners should know where to pay attention to when they are learning. For example, when attacking a blocking opponent, players should focus their attention on the weak spots of their opponent defence. Meanwhile, the *Look* purpose is to assist beginners with the proper timing when performing certain inputs.

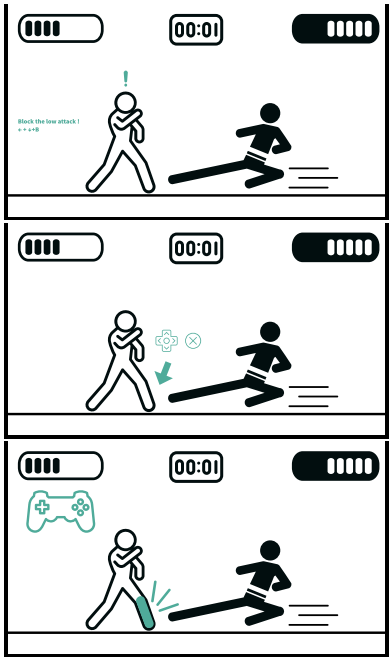

Figure 6: Visual Cues Sketches: Subtle Markedness (top), Integrated Markedness (middle), Emphasised Markedness (bottom).

This is important as timing is a part of fighting game mechanics. Some input executions in fighting games are timing-sensitive, hence they can be a challenge for beginners to learn. For instance, blocking an opponent's attack requires the block input to be pressed just before the attack lands.

For markedness, we selected *Integrated* markedness. This decision was made by sketching several visual cues' usage in the blocking sub-tutorial (see Figure 6). Based on our sketches, we found that *Integrated* markedness strikes the best balance between subtlety and prominence. This balance is crucial as we do not want to distract beginners from where they should focus. At the same time, we want it to be attractive enough to achieve its purpose. In the gameplay sketch for *Subtle* markedness, players are informed of the timing by a blinking exclamation mark. Instructions are presented in text on the right. For *Integrated* markedness, players are informed of the timing by an arrow indicating where the attack will lands. Instructions are presented using button symbols on top of the arrow. For *Emphasised* markedness, players are informed of the timing through highlighted vulnerable spots. Instructions are presented using a virtual controller on the top right.

Using the *Integrated* markedness sketch in Figure 6 as reference, we incorporated the visual cue design into our attacking, blocking, and neutral sub-tutorials. In the attacking sub-tutorial, orange arrows were used to point toward the vulnerable spot in the opponent's defense. Above the arrows, we placed the notations for the inputs that the player must perform to exploit the vulnerable spot. For the blocking sub-tutorial, we used the orange arrows to point towards the opponent's target spot. These arrows appear a few seconds before the opponent actually attacks, thus granting

Figure 7: From top to bottom, visual cues usage in attacking, blocking, and neutral sub-tutorial.

the player time and hint to react. Above the arrows, notations for the blocking inputs were placed to block the incoming attack. In the neutral sub-tutorial, we used pairs of orange arrows as marking points to indicate the player's maximum attacking range. This can act as a useful tool to help players time their pokes to attack an incoming opponent. Above the pair of arrows, we placed the attack inputs with the corresponding range. Figure 7 illustrates the usage of visual cues in all three sub-tutorial.

4.3 Modification: Context-Sensitive Guidance

In order to satisfy the *spatial and temporal contiguity* guidelines, which were also identified as lacking from the *Guilty Gear Strive* tutorial, we incorporated context-sensitivity into our tutorial design. We adopted the surprise approach used in the *Them's Fightin' Herds* tutorial. The surprise approach works by having the AI-controlled opponent in the tutorial do something that players would not expect. For instance, we can task players to block an incoming low attack from an opponent, but instead set the opponent to attack the players using an overhead attack. By using this surprise, we can show players how each type of attack works and demonstrate its usage in breaking a character's defence. Figure 8 illustrates the use of surprise to add context-sensitivity. First, players are tasked to block an incoming low attack. Then, players are surprised with an overhead attack instead. After the surprise, information can be delivered in a context-sensitive manner.

An important consideration before adding a surprise is timing [1]. In our tutorial, we used the round system to determine the best time the surprise should be shown. That is, we used the number of rounds won by the players as a heuristic to gauge their initial mastery of the learning outcome in the tutorial. In the *Them's*

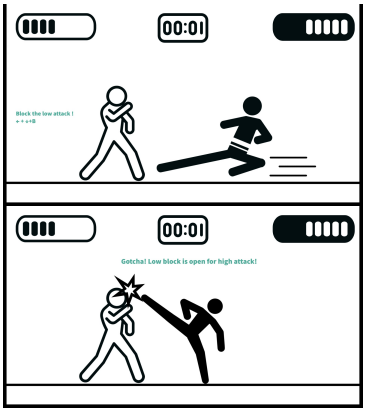

Figure 8: Context-sensitive tutorial sketch.

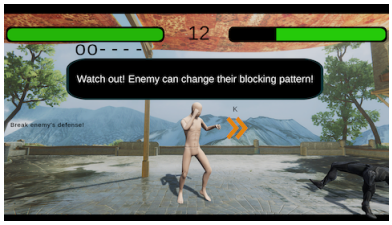

Figure 9: Context-sensitive information textbox

Fightin' Herds tutorial, there is only a single round. However, we decided to add an extra buffer for our players, so we used two rounds. Moreover, since one round is dedicated to context-sensitive surprises, our tutorial had an additional round compared to the *Guilty Gear Strive* tutorial. Therefore, the total number of rounds for our tutorial was six instead of five. Figure 9 shows the information delivered after a surprise from our tutorial.

Another thing to consider in delivering context-sensitive guidance is to accommodate expert players. Expert players might find the guidance unnecessary, which can hinder their learning experience [12]. Hence, the guidance should not be shown when players already successfully overcame the surprise. In our given example (Figure 8), if players manage to block the opponent's attack successfully, the text explanation for the surprise is skipped. Therefore, from the players' perspective, the current round is won.

5 EVALUATION

We conducted a user study to evaluate the effectiveness of the tutorial we developed following our design guidelines. We designed a between-subjects experiment to compare our tutorial to the *Guilty Gear Strive* tutorial. In the user study, participants were first required to answer a short screening survey to determine their background experience with video games. Eligible participants then played either our tutorial or the *Guilty Gear Strive* tutorial. Participants were then matched against several AI-controlled characters in *Guilty Gear Strive* to measure their attained competency. Finally, participants took part in an interview regarding their experience. The overall session lasted around one hour, including 5 minutes for

the screening survey, 15 minutes for playing the tutorial, up to 30 minutes for the competency test, and 10 minutes for the interview.

A total of 10 participants took part in the user study. The target participants for our user study were people aged 18 years or over who have never played any fighting games or have played fighting games for less than 10 hours in their life. Participants were recruited using word-of-mouth and also through the university's participant recruitment system. This research received approval from the university ethics committee.

5.1 Data Analysis

The aim of our evaluation was to compare the attained competency and reported experience of the group who played the *Guilty Gear Strive* tutorial with the group who played our tutorial. Competency was measured by how many AI-controlled characters of increasing difficulty were defeated in *Guilty Gear Strive* survival mode. Competency measured from the two groups was compared via an unpaired T-test, which is appropriate for our small sample size [20]. The hypotheses for our T-test were:

- **Null Hypothesis**: No difference in the number of AI-controlled characters defeated between groups.
- **Research Hypothesis**: Players who played our tutorial can defeat more AI-controlled characters than players who played the in-game tutorial.

In addition to measuring competency, we also measured the average completion rate for each tutorial. Completion was measured by how many sub-tutorials participants finished within the allocated 15 minutes. Since there were 3 sub-tutorials in total, each sub-tutorial contributed to 33.3% of the overall tutorial completion.

Reported player experience was gathered through semi-structured interviews. Interview questions covered the following topics:

- Player experience with the tutorial assigned.
- Applicability of the tutorial in a real fighting game match.
- Learning difficulty in the tutorial.
- Possible improvements on assigned tutorial design.

6 RESULTS

This section presents analysis of both quantitative and qualitative results collected from our user study.

6.1 Participants

Ten participants (4 males, 6 females) participated in this study. Five participants reported playing video games once per month, three reported playing a few times per week, one reported playing every day, and one once per week. The video game genre most frequently played by participants was Role-Playing (36%), followed by Simulation (25%), Sports and Adventure (13% each), and Action and other genres (6% each).

6.2 Quantitative Data

Competency was measured by how many AI-controlled characters of increasing difficulty participants defeated in *Guilty Gear Strive* survival mode. Our data showed that the mean number of AI characters defeated by participants who played our tutorial ($M = 2.6$) was higher than the in-game tutorial group ($M = 1.2$). However, this difference was not statistically significant ($p = .0541$). Thus, the null hypothesis cannot be rejected. Table 2 describes the T-test summary produced from our analysis. We also examined level completion rate. From this data, it was observed that every participant in the group that played our tutorial managed to successfully finish every sub-tutorial available. On the other hand, the average completion rate for the in-game *Guilty Gear Strive* tutorial was only 75%.

Table 2: T-test results for Competency measure in Guilty Gear Strive (GGS) tutorial and our tutorial.

	GGS tutorial	Our tutorial
Mean	1.20	2.60
Standard Deviation	0.84	1.52
Standard Error of Mean	0.37	0.68
Standard Error of Difference	0.7750	
Degree of Freedom	8	
One-tailed P-value	0.0541	
T-value	1.8074	

6.3 Qualitative Data

We analysed the qualitative data collected during our semi-structured interviews. In this section, we present our analysis, structured into three categories, related to issues in the *Guilty Gear* tutorial, impact and limitations of our tutorial design, and user-suggested additions to both tutorials. Player quotes are presented in italics with the letters "A" (in-game tutorial) and "B" (our tutorial) appended to the participant's number. The way in which the design guidelines relate to the qualitative data is also discussed.

6.3.1 Issues in the Guilty Gear Tutorial: Clarity, Timing, Context. Participants from the in-game tutorial group stated they had difficulty understanding the instructions given in the tutorial (*"they are asking to do this kind of movement, but they don't really say which button I should press" - P1A*). This lack of understanding led participants to develop bad habits in the real game after playing the tutorial (*"Even not knowing what exactly what I was pressing, I was just spam clicking" - P5A*). Participants also highlighted how they needed to experiment and explore more in the tutorial due to the unclear instructions (*"I feel like I need to figure things on my own" - P1A*) and expressed the need for additional help in completing the tutorial (*"I feel like I need additional help apart from the information presented" - P2A*). These comments provide reflections on the importance of providing coherent information and appropriate signalling, which supports the *concise information* and *prominent visuals* guidelines.

Participants also expressed concern with the unguided timing in the tutorial, noting that it was *"very quick, I don't have time to think, and the game just starts" - P1A*. Participants' struggle with the timing of visuals indicates that effective *signalling* is a critical aspect of effective instructional design. Participants also noted they were unclear on the context and application of the tutorial's content, with one participant stating *"it is not applicable in the real game. I feel like I can just jump and then move away" - P3A*. This illustrated a lack of context-sensitivity within the in-game tutorial. In summary, the *Guilty Gear* tutorial did not provide clear and sufficient

information through its instructions in the game. Moreover, information delivered was lacking in context, which led to difficulty in transferring and applying it in the real game. Participants' reported difficulty in transferring skills from the tutorial to the real game is an example of *Guilty Gear Strive* failing to implement spatial and temporal contiguity through *context-sensitive guidance*.

6.3.2 Impact and Limitations of Our Tutorial Design. Participants who played our tutorial stated that it helped them understand and play fighting games easier, describing it as *"really helpful. It makes it pretty much easier because I am not really used to playing fighting game and having that kind of tutorial really helped me" - P1B*. The applicability of our tutorial was also clear for participants (*"The tutorial is really helpful for me because I have learned how to actually attack, defence and all. Because we have like a lot of buttons to attack right? So, I knew that, and I am familiar with all the movement before I played the real game. I found it was really helpful for me and can help me in playing the real game" - P3B*). As our tutorial was directly linked with transferable skills used in gameplay, it was successful in achieving a number of design guidelines, including presenting *concise information* and appropriate signalling through appropriate and *prominent visuals*.

Participants also found the added context-sensitivity feature to be helpful, stating that the pop-up text box was *"a helpful prompt to remind me of what is the move that I actually need to do" - P3B*. Participants also felt that the context-sensitivity encouraged them to think in the tutorial, stating that *"the tutorial is quite helpful, like the surprises in the tutorial, it gives some sort of ability to think in the tutorial to asses how much you learned" - P1B* and *"it is challenging you to think, and I like that rather than just providing the answer directly" - P5B*. Positive feedback on the inclusion of prompts and surprises provides support for the effective implementation of the *context-sensitivity*, *limited annotations*, and effective use of multimedia through use of *graphics with text instructions*.

Although the feedback regarding our tutorial was mostly positive, we also received some criticism. For instance, the visual cues we provided in the game were described as being *"confusing at first, but then as I try to practice more, I find it helpful" - P3B*. Some participants were even unsure of the purpose of the provided visual cues: *"When I first look at it, I think in my intuition, it is asking me to move forward. But I am not really sure why it is there" - P3B*. Aside from the design, our implementation of the tutorial itself was also criticised. In particular, participants noted that they faced some difficulty in the real game due to the different character movements in the tutorial. A participant highlighted that the movement in the tutorial was *"like a low-powered attacks but in the real game, it is really high-powered. There is a lot of other moves you can use, and the enemy can use against you" - P5B*. Moreover, technical issues were also reported to have happened in the tutorial. Character moves that require buttons to be pressed in combinations were described to be *"a bit lagged behind when I press the button combinations" - P2B*. This issue with responsiveness is important to note, as it can affect reaction time and add difficulty in learning movement that requires strict timing, such as the blocking mechanic in the blocking sub-tutorial.

6.3.3 User-Suggested Additions. To alleviate the issues discovered in the *Guilty Gear* tutorial, some participants mentioned the need for simple instructions (*"provide more simple and clear instructions. Like I said before, adding information like which button I should press" - P1A*). Additionally, cues in the form of audio and visuals were also recommended. In particular, a participant wished to have cues in the form of *"a light-up version of a button you are meant to click and tells you 'Press this key and and see what it does.'" - P5A*. Meanwhile, audio cues were suggested to be *"some sound effect when I mistakenly do something" - P4B*. Interestingly, one participant mentioned that information within the tutorial should also be contained in an accessible information page where players can go back and forth (*"maybe you can have like a page to show how to make a combo or a skill. In the game I did not see any" - P4A*). Furthermore, participants expressed a desire for a mode that allows for free trials and additional practice within the tutorial. One participant highlighted the need to have a quick trial so that players can get used to the button input first before learning about its usage (*"Have a, you know when we start, it is already game starts. If we have like a trial version say you should just press those buttons to practice your skills before you start the real game" – P2A"*). Also, in order to better apply the teaching of the tutorial, participants also suggested *"having like a practice duel where you have to use all the different methods you have learned to win. That way you can know how it all works together" – P5A"*.

7 DISCUSSION

Our research investigated how to design a fighting game tutorial to support player learning and increase new player competency. We aimed to create an exemplar of a fighting game tutorial that focuses on providing learning support for new players. We first developed design guidelines by mapping learnability theories from video game tutorial design to the Cognitive Theory of Multimedia Learning [23], resulting in our proposed Cognitive Theory of Game Learning design guidelines. Then, we analysed the *Guilty Gear Strive* tutorial to explore how existing tutorials met our guidelines and to identify areas for improvement. Based on our analysis, we developed our tutorial by replicating the *Guilty Gear Strive* tutorial and adding context-sensitivity [2, 11] and visual cues [29, 37]. Finally, we compared our tutorial against the in-game *Guilty Gear Strive* tutorial via a user study with 10 participants.

Our evaluation and comparison of the in-game tutorial and our tutorial returned mixed results. The competency comparison showed that there was no significant difference in attained competency between participants who played the in-game tutorial and participants who played our tutorial. However, during interviews, the in-game tutorial was criticised for its inability to provide basic learning support, such as giving clear instructions and guiding the learning pace of the tutorial. In contrast, participants found our tutorial to be helpful in learning to play fighting games, as it provided multiple learning supports, such as assisting with information retention, providing clear learning applications, and encouraging thinking.

The lack of a statistically significant difference in attained competency might be due to our small sample size, limitations of our metric, or discrepancies between our tutorial and the actual game. Although the difference in attained competency was not statistically significant, it was very close at $p = .0514$ (with a threshold of

$p < .05$). With a larger sample size, our results could become significant. Also, it is possible that the competency metric of counting the number of AI characters defeated was too simplistic. Our metric gave participants little time to demonstrate what they learned, as their participation ended once they lost to an AI character, due to the time constraint of the user study. The same problem with time constraints was also faced by Frommel et al. [11] in their context-sensitive tutorial evaluation. As our metric was based on matches against AI characters in *Guilty Gear Strive*, we cannot accurately deduce whether a participant's matches against the AI characters were influenced by elements of luck or nuances in the AI's behaviour. Finally, throughout the development process of our own tutorial, we encountered difficulties in replicating character movements and button responsiveness to match the in-game tutorial. As a result of these difficulties, our tutorial has different character movements and clunkier button sensitivity compared to the actual game. These issues were criticised and alluded to by our participants as adding difficulty for them to transition from our tutorial to the competency test in the real game.

Despite the limitations, there is evidence that our tutorial design presented an improvement over the in-game tutorial. We attribute this improvement to the issues that we identified through our analysis and subsequently addressed in our own design. The issue of players needing extra explanation was alleviated by the addition of visual cues. This is evidenced by the higher completion rate achieved by participants who played our tutorial compared to the in-game tutorial. This finding supports the importance of visual cues in tutorials, as they can serve as a completion guide [29]. Furthermore, we successfully addressed the issue of unclear application of tutorial instructions by incorporating context-sensitivity. This is evidenced by participants' positive comments regarding the clear application of our tutorial instructions. The surprises incorporated to add context to our tutorial were also reported by participants to have additional benefits of aiding in information retention and encouraging them to think when playing the tutorial. This finding highlights the importance of context-sensitivity in fighting game tutorials.

Despite the improvements reported, our tutorial can still not be considered an exemplar. As criticised by our participants, our visual cue design was confusing and required repetition to understand its purpose. Furthermore, participants also suggested several modifications that could be added to our design. For example, instead of text and arrows, it was suggested that our visual cues be replaced with light-up button symbols. Our participants also suggested several additional features they believed to be beneficial to both our tutorial and the in-game tutorial. These additional features were free-play and trial mode, accessible information pages, and auditory cues and feedback. Taking these suggestions into consideration, our tutorial still requires further improvement to become an exemplary tutorial.

In its current form, our tutorial design can be used as an example of how existing learnability theories in general multimedia and video game design can be used to design a fighting game tutorial that supports player learning. Moreover, our proposed Cognitive Theory of Game Learning design guidelines can be used as a foundation for designing, evaluating, and improving game tutorials for fighting games and other genres. Our research demonstrated that our guidelines can be used to improve learning support in current fighting game tutorials. However, as they are based on general game and multimedia design theory, they are not specific or limited to fighting games. We hope that future work can further utilise and investigate our design guidelines and their applicability and efficacy for designing, evaluating, and improving tutorials in different game genres. Future work could also include further experiments with a larger sample, longitudinal play, and improved performance and competency metrics, as well as investigating the suggestions made by our participants.

8 CONCLUSIONS

The aim of this research was to develop a design exemplar of a fighting game tutorial level that focuses on supporting learning for new players. Using the Cognitive Theory of Multimedia Learning [23], we organised learnability theories from video game tutorial design into design guidelines, named Cognitive Theory of Game Learning. We applied our design guidelines to analyse the *Guilty Gear Strive* tutorial, which we used as the foundation to design our own tutorial, including two key modifications - context-sensitivity and visual cues. Finally, we conducted a user study to evaluate our tutorial design against the base design.

Our tutorial design demonstrated improvements over the in-game tutorial in terms of aiding tutorial completion and providing learning support. By incorporating visual cues, our tutorial achieved better overall tutorial completion compared to the in-game tutorial. The addition of context-sensitivity made the applications of our tutorial content clear to our participants. Furthermore, the context-sensitivity modifications also helped participants retain information and encouraged them to think when playing the tutorial.

Despite the improvements made, our tutorial is still not an exemplary design. Based on our competency test data, there was no difference in attained competency between participants who played our tutorial and participants who played the in-game tutorial. Moreover, our tutorial design was also criticised for having confusing visual cues that participants struggled to understand. Hence, our tutorial still has room for improvement before becoming an exemplary design. Regardless, in its current form, our design can still be used as an example of how a fighting game tutorial can support learning for new players. Our design provides a starting point for further research into tutorial level design for fighting games. Moreover, our design guidelines provide a foundation for designing, evaluating, and improving game tutorials in general, and for future work on learnability in games.

REFERENCES

[1] Ernest Adams. 2014. *Fundamentals of game design* (third edition ed.). New Riders, Berkeley, CA.
[2] Erik Andersen, Eleanor O'Rourke, Yun-En Liu, Rich Snider, Jeff Lowdermilk, David Truong, Seth Cooper, and Zoran Popovic. 2012. The impact of tutorials on games of varying complexity. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. ACM, Austin Texas USA, 59–68. https://doi.org/10.1145/2207676.2207687
[3] Works ArcSystem. 2018. Dragon Ball Fighterz. https://www.bandainamcoent.com/games/dragon-ball-fighterz
[4] Works ArcSystem. 2021. Guilty Gear Strive. https://www.guiltygear.com/ggst/en/
[5] Vassiliki Bouki, Daphne Economou, and Anastassia Angelopoulou. 2011. Cognitive theory of multimedia learning and learning videos design: the redundancy principle. In *Proceedings of the 29th ACM international conference on Design of communication (SIGDOC '11)*. Association for Computing Machinery, New York, NY, USA, 271–278. https://doi.org/10.1145/2038476.2038531

[6] Capcom. 1993. Street Fighter 2. https://www.capcom.com/

[7] Kody R. Dillman, Terrance Tin Hoi Mok, Anthony Tang, Lora Oehlberg, and Alex Mitchell. 2018. A Visual Interaction Cue Framework from Video Game Environments for Augmented Reality. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*. ACM, Montreal QC Canada, 1–12. https://doi.org/10.1145/3173574.3173714

[8] John Dunlosky, Katherine A. Rawson, Elizabeth J. Marsh, Mitchell J. Nathan, and Daniel T. Willingham. 2013. Improving Students' Learning With Effective Learning Techniques: Promising Directions From Cognitive and Educational Psychology. *Psychological Science in the Public Interest* 14, 1 (Jan. 2013), 4–58. https://doi.org/10.1177/1529100612453266

[9] Gareth Dutton. 2021. 'Guilty Gear: Strive' review: A Well-Considered Reboot Looks To Revitalise The Series. https://www.nme.com/reviews/game-reviews/guilty-gear-strive-review-a-well-considered-reboot-looks-to-revitalise-the-series-2963429 Publication Title: NME.

[10] Adam Factor. 2021. Guilty Gear -Strive- Review. https://www.spritesanddice.com/reviews/guilty-gear-strive-review/ Publication Title: Sprites and Dice.

[11] Julian Frommel, Kim Fahlbusch, Julia Brich, and Michael Weber. 2017. The Effects of Context-Sensitive Tutorials in Virtual Reality Games. In *Proceedings of the Annual Symposium on Computer-Human Interaction in Play (CHI PLAY '17)*. Association for Computing Machinery, New York, NY, USA, 367–375. https://doi.org/10.1145/3116595.3116610

[12] Zack Hiwiller. 2016. *Players making decisions: game design essentials and the art of understanding your players*. New Riders/NRG, New York?

[13] Philip Hou. 2020. Fighting Game Tutorials That Teach the Fundamentals. https://www.cbr.com/fighting-game-tutorials-teach-fundamentals/ Section: Video Games.

[14] Mohamed Ibrahim. 2012. Implications of Designing Instructional Video Using Cognitive Theory of Multimedia Learning. *Critical Questions in Education* 3 (2012), 83–104.

[15] Sunder Iyer. 2021. Core Mechanics of Fighting Games. https://dev.to/goldenxp/core-mechanics-of-fighting-games-24ej Publication Title: DEV Community.

[16] Alita Joyce. 2019. How to Measure Learnability of a User Interface. https://www.nngroup.com/articles/measure-learnability/

[17] Dominic Kao, Alejandra J. Magana, and Christos Mousas. 2021. Evaluating Tutorial-Based Instructions for Controllers in Virtual Reality Games. *Proceedings of the ACM on Human-Computer Interaction* 5, CHI PLAY (Oct. 2021), 1–28. https://doi.org/10.1145/3474661

[18] Adam Kramarzewski and Ennio De Nucci. 2018. *Practical game design: Learn the art of game design through applicable skills and cutting-edge insights*. Packt Publishing Ltd.

[19] Reverge Labs. 2015. Skullgirls 2nd Encore. https://skullgirlsmobile.com/#

[20] James Lani. 2021. T-test. https://www.statisticssolutions.com/t-test/

[21] Pascaline Lorentz. 2016. The culture of digital fighting games. Performance and practice. *International Journal of Play* 5, 2 (May 2016), 218–221. https://doi.org/10.1080/21594937.2016.1161704

[22] Mane6. 2018. Them's Fightin' Herds. https://www.mane6.com/

[23] Richard E. Mayer. 2009. *Multimedia Learning*. Cambridge University Press.

[24] Richard E Mayer. 2014. *The Cambridge handbook of multimedia learning*. Cambridge university press. https://doi.org/10.1017/CBO9781139547369

[25] Galen Midford. 2019. Video Game Tutorials Exhibit Good Design Techniques \textbar ATD. https://www.td.org/magazines/td-magazine/video-game-tutorials-exhibit-good-design-techniques

[26] Namco. 1980. Pac-Man. https://www.bandainamcoent.com/games/pac-man

[27] Jakob Nielsen. 1993. *Usability engineering*. Academic Press, Boston.

[28] Lev Poretski and Anthony Tang. 2022. Press A to Jump: Design Strategies for Video Game Learnability. In *CHI Conference on Human Factors in Computing Systems*. ACM, New Orleans LA USA, 1–26. https://doi.org/10.1145/3491102.3517685

[29] Amy Shannon, P O Box, Acey Boyce, Chitra Gadwal, and Dr Tiffany Barnes. 2013. Effective Practices in Game Tutorial Systems. In *Proceedings of the Foundations of Digital Games*. 8 pages.

[30] Bandai Namco Studios. 2015. Tekken 7. https://en.bandainamcoent.eu/tekken/tekken-8

[31] Penny Sweetser. 2020. GameFlow 2020: 15 Years of a Model of Player Enjoyment. In *Proceedings of the 32nd Australian Conference on Human-Computer-Interaction* (Sydney, NSW, Australia) *(OZCHI'20)*. ACM, New York, NY, USA.

[32] Penelope Sweetser and Simon Dennis. 2003. *Facilitating Learning in a Real Time Strategy Computer Game*. Springer US, Boston, MA, 49–56. https://doi.org/10.1007/978-0-387-35660-0_6

[33] Penny Sweetser and Daniel Johnson. 2019. Evaluating the GameFlow Model with Different Stakeholders. In *Extended Abstracts of the Annual Symposium on Computer-Human Interaction in Play Companion Extended Abstracts* (Barcelona, Spain) *(CHI PLAY '19 Extended Abstracts)*. ACM, New York, NY, USA, 697–703. https://doi.org/10.1145/3341215.3356286

[34] Penny Sweetser and Daniel Johnson. 2019. GameFlow and Player Experience Measures: An Initial Comparison of Conceptual Constructs. In *Proceedings of the 31st Australian Conference on Human-Computer-Interaction* (Fremantle, WA, Australia) *(OZCHI'19)*. ACM, New York, NY, USA, 317–321. https://doi.org/10.1145/3369457.3369486

[35] Penelope Sweetser, Daniel Johnson, Peta Wyeth, Aiman Anwar, Yan Meng, and Anne Ozdowska. 2017. GameFlow in Different Game Genres and Platforms. *Computers in Entertainment* 15, 3 (April 2017), 1:1–1:24. https://doi.org/10.1145/3034780

[36] Penelope Sweetser and Peta Wyeth. 2005. GameFlow: a model for evaluating player enjoyment in games. *Computers in Entertainment* 3, 3 (July 2005), 3. https://doi.org/10.1145/1077246.1077253

[37] David Whittinghill and Donald Grant Herring. 2017. A Comparison of Text-Annotated vs. Purely Visio-Spatial Instructions for Video Game Input Sequences. *Computers in Entertainment* 15, 2 (April 2017), 1–19. https://doi.org/10.1145/2700527

[38] Dorrani Williams. 2021. Guilty Gear Strive has the most in depth tutorial of any fighting game. https://www.vg247.com/guilty-gear-strive-depth-tutorial-fighting-game Publication Title: VG247.

[39] Nick Yee. 2016. Game Audience Profiles. https://quanticfoundry.com/audience-profiles/ Publication Title: Quantic Foundry.

[40] Wesley Yin-Poole. 2021. Guilty Gear Strive review - finally, a Guilty Gear for all fighting game fans \textbar Eurogamer.net. https://www.eurogamer.net/guilty-gear-strive-review-finally-a-guilty-gear-for-everyone