# CULTIVATING CULTURAL CURIOSITY THROUGH PLAY: A FRENCH COOKING SIMULATION GAME FOR ACCESSIBLE CULTURAL EDUCATION

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***ABSTRACT***

*The issue of limited cultural exposure is present in society due to fast-paced lifestyles and lack of awareness. In an effort to solve this problem, I focused on the food aspect of culture and developed a French cooking simulation game that promotes cultural curiosity through interactive gameplay and historical learning [14]. The game includes time-bound cooking challenges with a recipe book that has educational background information on traditional French dishes. Key systems include the cooking mechanics, the recipe-based learning component, and a progression system to maximize engagement. Design challenges included defining player interaction and ensuring cultural content was informative and accessible. A small-scale survey experiment showed high engagement (average enjoyment score: 4.2) and moderate cultural learning (3.7), indicating the game is both entertaining and educational [15]. Compared to other cultural learning tools, this game offers greater accessibility and balance, also providing a scalable way to introduce users to diverse cultures.*

***KEYWORDS***

*Cultural Education, Cooking Simulation, Interactive Learning, French Cuisine*

## 1. INTRODUCTION

Culture resides in every aspect of our lives, from the clothes we wear to the food we eat. Food is essential but beyond that, it's a way for humans to connect with different cultures. The issue now is that many people move too quickly with their lives to bother with learning about the origins of their food or the process behind making it. A statistical analysis of 172 participants showed that individuals with higher cultural intelligence were significantly less likely to avoid trying new foods [1]. The results support the idea that greater cultural awareness and openness are linked to lower food neophobia. This proves that more cultural knowledge is associated with more willingness to try diverse cuisines. However, my French cooking game solves this problem by fostering curiosity and respect for French culture through the preparation of popular and traditional dishes in France. Engaging in a game where players prepare food from a specific culture while also learning about each dish's background promotes an immersive and accessible way of developing an appreciation for French culture and an interest in learning about diverse cultures.

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The other methodologies, such as the cross-cultural simulation, VR living spaces, and board game, all attempt to accomplish the goal of creating an opportunity for people to experience diverse cultures and gain more cultural knowledge [12]. However, like many projects, there are faults in these approaches. The in-person simulation may not be the best for those with limited time or a lack of transportation, the VR space couldn't be accomplished without a pricey headset, and the board game relies on a group of people to be present. My cooking game is an improvement over these programs because of its easy access and balance in entertainment and education.

To solve the issue of people having limited opportunity to experience other cultures, my French cuisine-centered game offers an entertaining and engaging solution by allowing players to learn about another culture through cooking their traditional foods. My solution is unique because it combines the popular idea of cooking simulation games with the less popular concept of learning history [2]. The cooking-aspect of my game is to give players an idea of how French dishes, pastries, and beverages are made and a challenge to serve the food properly, within a certain amount of time, and to earn enough money to continue supplying the restaurant. The learningaspect of my game is through the recipe book and the dishes themselves. Since this game is centeredaround French cuisine, players will automatically become more familiar with specific French dishes and ultimately understand the culture more. The recipe book provides an in-depth description and a mini history lesson with each dish, pastry, or drink that the player is trying to make.

The experiment focused on testing how well the game connects with players, both in terms of enjoyment and cultural learning. A simplified 2-question survey was used, asking players if they enjoyed the cooking gameplay and if they learned something new about French cuisine. Ten participants responded using a 1–5 scale [3]. Results showed strong engagement, with an average score of 4.2 for enjoyment and 3.7 for cultural learning. This suggests that players found the game fun and somewhat educational. While the cultural learning score was lower, it still reflected a positive experience. It's likely that cultural understanding improves the more someone plays, as they encounter more dishes and use the recipe book. The feedback confirms that the game successfully entertains and begins to introduce players to French cuisine. Improvements could be made by making the cultural elements more visible and interactive throughout the gameplay to boost learning without reducing fun.

## 2. CHALLENGES

In order to build the project, a few challenges have been identified as follows.

### 2.1. Learning Culture Through Play

Sample Skeptical Question: How can a game really teach someone about culture? Isn't it just for entertainment?

Sample Response: That's a fair question. While the game is designed to be fun, it also teaches through interaction. Players aren't just clicking buttons—they're learning the names of real French dishes, reading recipe details, and going through the cooking process. This method sticks more than just reading about food in a textbook. The goal is to spark interest in French culture by making it hands-on and enjoyable. Even if players don't realize they're learning, they're still being exposed to cultural elements in a way that feels natural and memorable.

### 2.2. Embedding Culture in Gameplay

Sample Skeptical Question: Won't people just rush through the game and ignore the cultural parts?

Sample Response: Some might, but that's why the game is designed with culture baked right into the gameplay. You can't complete certain orders without checking the recipe book, which includes short facts and backgrounds about each dish. That way, even if players are focused on winning, they're still being exposed to the cultural side of things. Plus, if the game is fun, people are more likely to play again—and the more they play, the more they absorb. It's all about finding that sweet spot between learning and entertainment.

### 2.3. Simple Games, Lasting Impact

Sample Skeptical Question: Isn't this kind of game too simple to make an actual impact?
Sample Response: It may look simple, but sometimes the simple stuff sticks the most. The idea isn't to overload players with information—it's to introduce them to French culture in a fun, lowpressure way. Most people won't sit down and read a book about French food history, but they might play a game for 15 minutes. That short time could be enough to make them curious or inspired to learn more. Even sparking small interest or awareness can have a bigger impact than you'd expect.

## 3. SOLUTION

Loading into the game, you will start off in the main menu. You will have a simple directory towards the main game where you will start off your cooking gameplay. During this gameplay, you are presented with many customer orders located at the top of the screen. With the mix of simple mouse and keyboard controls with the interaction system in the game, you are able to easily move around, control items, and access storage that plays into the overall gameplay. You will have access to a cooking book that shows all the recipes that you can try and remember or use as a guide while taking customer orders [4]. Without any over complications of UI work and controls, all the systems can easily come and work together without over stressing the player with the already stressful environment of gameplay.

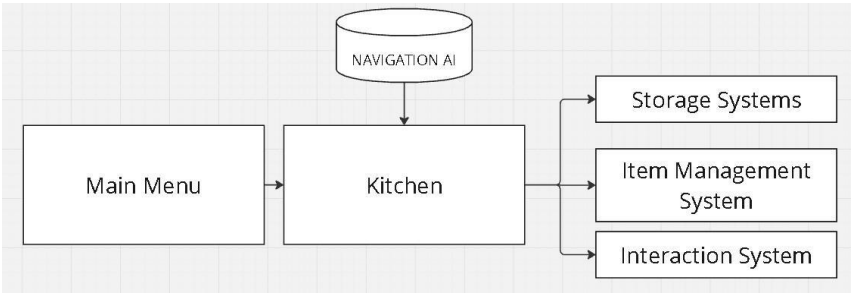


Figure 1. Overview of the solution

One of the most important system in the game is the interaction system. Almost all of the features in the game must use some kind of interaction whether that'd be a button click or a keyboard key press, from features like item holding and storage access to serving dishes to customers, interaction plays the biggest role.

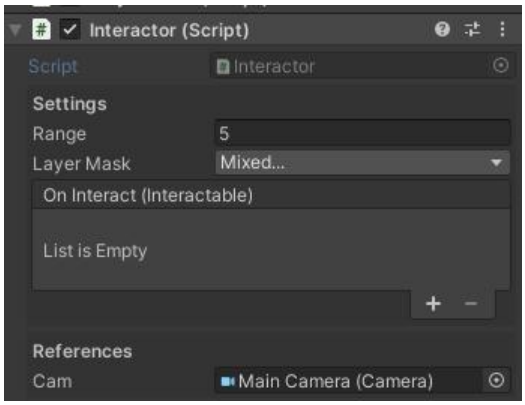


Figure 2. Screenshot of interactor

```
0 references
void Update()
{
    ray = cam.ViewportPointToRay(new Vector2(0.5f, 0.5f));

    if (Physics.Raycast(ray, out hit, range, layerMask))
    {
        if (hit.transform.TryGetComponent(out Interactable interactedObject))
        {
            // Outline Effect
            UpdateInteractionOutlines(interactedObject);

            // Input Action
            if (Input.GetMouseButtonDown(0))
            {
                interactedObject.Interact();
                OnInteract?.Invoke(interactedObject);
            }
        }
        else UpdateInteractionOutlines();
    } else UpdateInteractionOutlines();
}
```

Figure 3. Screenshot of code 1

In the Interactor script, to do any kind of interaction, we need access to the player's camera. Any interaction comes from shooting out an invisible ray (or Raycast) out from the camera and eventually hitting something that will determine that we interacted with something. At line 22, we use ViewportPointToRay with two input values of both 0.5 which will define a ray direction from the camera using position coordinates of your viewport [5]. In this case, two input values of 0.5 mean we will shoot out halfway through the x axis and halfway through the y axis that which correlates to the very center of your screen. Using a dot, or some kind of crosshair, we can say that a Raycast will shoot out from the middle of the screen that the user can aim and interact with objects around the world. At line 24, we cast the ray itself using Physics.Raycast with a specified range and allowable layers to hit. At line 26, we simply check if the 'hit', which is the reference to the object in range the ray hits, has a component Interactable. If the hit object has an Interactive component, and we click the left mouse button, we then call the Interact() function on the Interactable and run an event Action OnInteract that other scripts can listen to [6].

Another one of the most important component of the game is the PlayerHandscript. Almost most of the interaction in the game is picking up items such as food and cookware to cook anything. The PlayerHand script simply allows this picking up, and dropping, interaction.

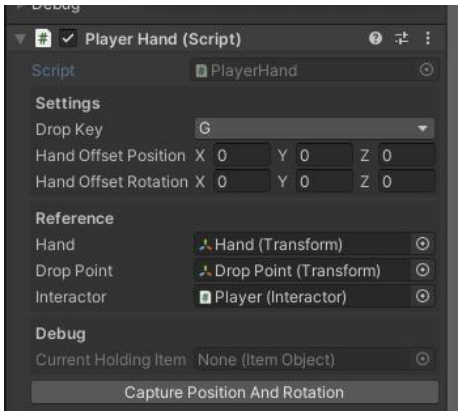


Figure 4. Screenshot of player hand

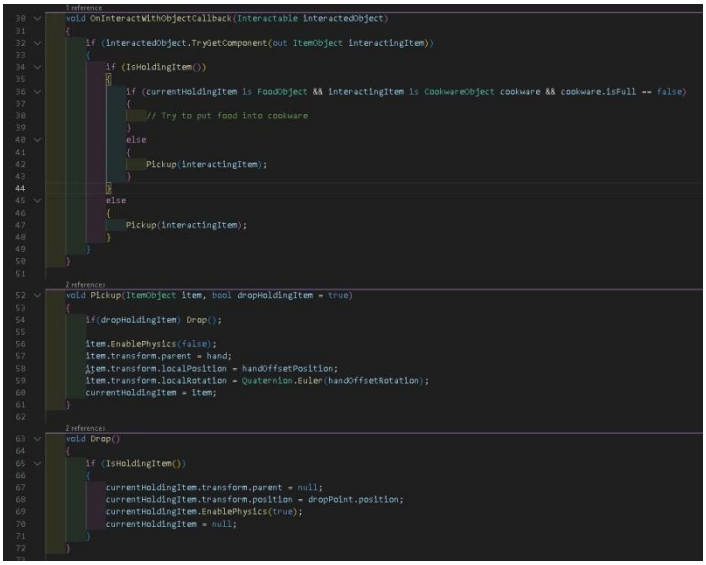

Figure 5. Screenshot of code 2

In the PlayerHand script, we need to get access to the Interactor script to add the OnInteractWithObjectCallback function at line 30 to the OnInteract event Action as a listener. Whenever we interact with something, the PlayerHand script needs to identify, at line 32, whether the Interactable object is an ItemObject [7]. Any ItemObject in the game can be picked up and ”show up” to our hand. The process is simple, if we did interact with an ItemObject, if we are not holding an item currently, simply call the Pickup function. If we are holding an item already, and if the item we are holding is a FoodObject and we are interacting with a CookwareObject, we will try to put the FoodObject into the CookwareObject to attempt cooking it, otherwise, again call the Pickup function [8]. The Pickup function will simply drop any item I have in my hand if I do have one currently, and simply teleport the interacted item to my hand and disable any of its physics so it does not fall out of my hand.

Creating dishes is useless without customers ordering food. The OrderingManager manages the adding and removing orders, calculating the time it takes to create and serve the food in time, and handling the scoring of each order. This script handles both the backend and frontend setup for each OrderItem.


Figure 6. Screenshot of the game

```
public OrderItem AddOrder(FoodObject foodObject)
{
    if (orderStatuses.Count >= maxOrders) return null;

    OrderItem newOrder = Instantiate(orderItemPrefab, orderParent);
    newOrder.Init(this);
    newOrder.foodObject = foodObject;
    newOrder.timeRemaining = CalculateOrderTimeRemaining(foodObject);
    newOrder.maxTime = newOrder.timeRemaining;
    newOrder.orderNumber = nextOrderNumber++;

    newOrder.RefreshUI();
    orderStatuses.Add(newOrder);

    OnNewOrder?.Invoke();
    return newOrder;
}

1 reference
public void RemoveOrder(int orderNumber)
{
    OrderItem orderToRemove = orderStatuses.Find(x => x.orderNumber == orderNumber);
    if (orderToRemove != null)
    {
        orderStatuses.Remove(orderToRemove);
        Destroy(orderToRemove.gameObject);
    }
    else
    {
        print($"Couldn't find any orders with ID {orderNumber}");
    }
}
```

Figure 7. Screenshot of code 3

We have set a maximum of 4 orders at a time. When we call the AddOrder function, OrderItemis spawned into the screen and sets its properties. An OrderItemis basically the indicator on the UI that shows the food, the order number, and a bar. An OrderItem has a max time or duration, the bar in the UI, which shows how long it takes for you to serve the order before failing the order and losing money. This is calculated using the CalculateOrderTimeRemaining function that looks through the assigned food object's recipes and adds up their cook time individually plus some additional time. Each Order Item also has order numbers to indicate to both the user and system which NPC this order is assigned to. The RemoveOrder just looks for a specific order number in the order list to remove which is called when the timer for that order runs out or is served.

## 4. EXPERIMENT

I want to test how well my game fits with a general audience, especially people who aren't familiar with French food or culture. It's important to see if they can still enjoy the game while

also learning something new about French culture through the cooking experience. That's the main goal of this experiment.

To keep the experiment simple and focused, I created a short 2-question survey using a 1–5 rating scale (1 being strongly disagree and 5 being strongly agree). The two questions asked were:

"I enjoyed the cooking gameplay."
"I learned something new about French cuisine."

These two questions were chosen to directly measure how fun the game is and whether it effectively teaches something about French food. The goal is to find out if players are both entertained and learning—if the game hits that balance, then it's doing what it's supposed to do. The feedback from this survey will help guide any improvements to game mechanics and cultural content.

| Participant | Q1: Enjoyed Cooking Gameplay | Q2: Learned About French Cuisine |
|---|---|---|
| 1 | 5 | 4 |
| 2 | 4 | 3 |
| 3 | 5 | 5 |
| 4 | 3 | 2 |
| 5 | 4 | 4 |
| 6 | 5 | 5 |
| 7 | 4 | 3 |
| 8 | 3 | 2 |
| 9 | 5 | 5 |
| 10 | 4 | 4 |

Figure 8. Table of experiment 1

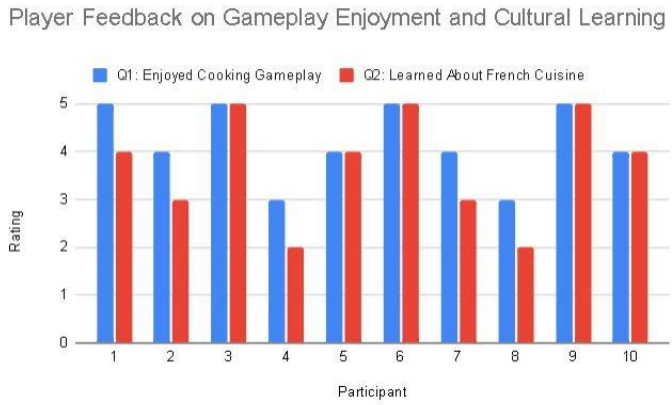


Figure 9. Figure of experiment 1

Based on the survey results, the average score for the question "I enjoyed the cooking gameplay" was 4.2, while "I learned something new about French cuisine" had a slightly lower average of 3.7. This gives us an overall average score of 3.95 across both questions. The higher score for gameplay enjoyment suggests that the core mechanics of the game are solid and engaging for most players. On the other hand, the lower score for cultural learning indicates that while some players did gain knowledge about French cuisine, others felt it wasn't as impactful or noticeable. This could mean that the educational elements—like the recipe book or cultural facts—might

need to be more tightly integrated into the gameplay. However, it ’s also likely that cultural learning improves with extended play. The more time players spend cooking different dishes and referencing the recipe book, the more they’re exposed to cultural content. All scores remained positive, and none dropped below a 2, showing a strong foundation. To build on this, future updates could make cultural insights more interactive and naturally embedded, encouraging curiosity and learning over time without taking away from the fun.

## 5. RELATED WORK

The project is named BaFa’ BaFa’, created by Dr. R. Garry Shirts in 1974. It is a cross-cultural simulation designed to enhance participants' understanding of diverse cultures [9]. In the simulation, participants are divided into 2 groups, each representing a distinct culture with unique values and they learn about each other's customs. Compared to my French cooking game, BaFa’ BaFa’ focuses on broader cultural interactions. My project offers a targeted exploration of French culture through its cuisine, providing historical context and educational content that BaFa’ BaFa’ does not. I believe my system is better for those specifically interested in learning one culture at a time. My game combines interactive gameplay with informative content about French dishes, offering both entertainment and education.

The project, "Cultural Windows: Towards a Workflow for Immersive Journeys into Global Living Spaces," was created by HessamDjavaherpour, Pierre Dragicevic, and Yvonne Jansen [10]. It employs virtual reality to let users explore diverse cultural living spaces, aiming to enhance cross-cultural understanding. In contrast, my French cooking game immerses players in French culinary traditions with entertainment and historical insights into French dishes. While "Cultural Windows" provides a broad cultural exploration through extended reality, my project offers a focused journey into French cuisine.

The project, “A Game-Based Tool for Cross-Cultural Discussion: Encouraging Cultural Awareness with Board Games,” was developed by Christian Nyman Gomez and Björn Berg Marklund. It uses a board game where players face cultural dilemmas to spark discussion and reflection on cultural differences. Studies showed this game improved participants’ cultural awareness and retention more than traditional discussions [11]. In contrast, my French cooking game is a self-paced interactive experience that immerses individual players in French cuisine and history. While the board game relies on group discussion to teach culture, my system lets players independently explore a specific culture through play. I believe my approach is better suited for engaging solo learners and sparking curiosity about French culture in an entertaining way.

## 6. CONCLUSIONS

Like many aspects in life, the primary limitation to my project is my own experience and knowledge. If I could start over with the new knowledge I’ve gained, I would’ve begun with a more structured and clear idea of what I wanted in my game. I would’ve thought more about how I wanted players to experience the program, like how they’ll be handling food objects or cooking, and the goal they’re trying to reach, like if there’s a score or amount of dishes they need to serve. If I was given more time to develop my project, I’d work on including more unique French dishes and creating a more accurate restaurant environment. Furthermore, I’d improve the game’s difficulty and replayability by introducing multiple modes like a time-limited level or one that branches into other cultures’ foods to promote culinary exploration and diversity [13].

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