

Interactive and Inclusive: Gamified Learning for Healthy Eating in Community Kitchen Entertainment Areas

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Abstract

Community kitchens, in addition to being spaces that increase the availability of food, are also important spaces for promoting sociality and health education. By incorporating gamification and fun elements, they can make learning about food and healthy food preparation more interactive and fun. This study investigates how entertainment space within a community kitchen employs gamification to promote social interaction alongside healthy eating habits and disordered eating behavior management. It examines the ways of approaching the use of gamified processes alongside communal engagement, in an effort to make sustainable, healthy practice lifestyle viable.

Keywords: Service design, UX Design, Gamification

1. Introduction

A community kitchen is a cooking project that takes place in the community, where people gather to cook together. These initiatives, which are frequently started as support programs, have the potential to eventually become self-sustaining. In order to promote independence and self-confidence in people, the process seeks to improve participants' broader food-related competencies, such as meal planning, grocery shopping, and healthy eating, rather than just cooking skills (Iacovou et al.,2013).

A study by Furber et al. (2010), for instance, shows that although community kitchens are frequently thought of mainly as a way to increase food access for those who are economically disadvantaged, their influence goes beyond just reducing food insecurity. According to the study, by encouraging social interaction and a sense of belonging, community kitchens also significantly improve the lives of people who are socially isolated. This suggests that, in addition to meeting nutritional needs, community kitchens serve as important spaces for social engagement and community building.

Research indicates that there are four primary risk factors contributing to the development of eating disorders: biological, psychological, familial, and sociocultural. It is not clear which of these factors has the most influence on the individual, but it is widely recognized that they all contribute to the development of disordered eating. Sociocultural factors, particularly the media, are particularly troubling because the media promotes the idea of thinness and consistently depicts characters who appear to have achieved success or attractiveness as thin. Numerous studies have examined the eating disorder rates among university-aged women who view media content that reinforces this idea that being thin is of value; behaviours that restrict food, certainty of weight gain being undesirable, and worry about how they physically appear, as they relate to restricted behaviours are extreme manifestations of eating disorders (anorexia nervosa and bulimia nervosa) among women (Harrison and Cantor, 1997).

We anticipate that the integration of gamified learning components aimed at healthy eating in communal kitchens will promote people to consume healthier lifestyle choices and to develop a greater sense of belonging and community. Gamified techniques, in contrast to more traditional informational methods, stimulate cognitive and affective involvement. According to Deterding et al. (2011), game design elements induce a feeling of "gamefulness" that raises user involvement and motivation. Likewise, Baranowski et al. (2008) illustrate that using games and narrative-based experiences to promote health-related behavior change makes it more efficient and long-lasting. In the same view, this project aims to explore the ways in which gamified, interactive resources integrated within community kitchen recreation spaces can promote inclusive social engagement and healthier eating.

2. Literature Review

Mahr, Kalogeras, and Odekerken-Schröder (2013) posit that food consumption is an experiential and emotive process. The process is posited to have implications for the individual and society in general. In examining the food experience, the individual's prejudice is important in explaining his/her behavior. Most of these prejudices form the cornerstone of the consumption context (Mahr, Kalogeras & Odekerken-Schröder 2013). Community kitchens are such locations from this perspective in which the food preferences of individuals can do more for society.

Community kitchens are such important places that develop people towards one another and establish fundamental cooking skills. The addition of interactive games in such places not only provides healthy eating facts in a hands-on way but also makes it easy to translate theoretical knowledge into practice, ultimately guiding people towards healthier lifestyle choices (Iacovou et al., 2013).

These kinds of interactive techniques involve various types of games (memory games, cooking games, role-play games...) to actively involve all participants in the nutrition education process and obtain maximum engagement. Research indicates these types of games effectively increase nutrition knowledge and encourage lasting behavior change, especially among children and teens who are critical to the fight against unhealthy eating (Aziz 2023; Chagas et al., 2018).

This literature review section will examine the role that interactive games can play in promoting healthy lifestyles in community kitchen recreation areas within a theoretical framework.

2.1. Community Kitchens

Service design is a commonly utilized approach in social and public service disciplines that is multidisciplinary and focuses on human-centered considerations of the needs, experiences, and involvement of users. It employs a feedback and iteration approach to assist with constant service improvement (Nguyen, 2025). In this instance, community kitchens is a service design process product. Users are provided a social service space design consideration in regards to needs (Iacovou and et al., 2013). (Figure 1.).



Figure 1. Community Kitchens (Carrefour Solidaire, 2024).

One of them is portable community kitchens that can be used for classes and lectures, implemented by MA Interior Design graduates from the University of East London (Ott 2021). Thus, it has been seen that community kitchens can also serve different contexts.

2.2. Interactive Games for Community Kitchens

Social pedagogical practices are grounded in social involvement and interaction. Individual involvement is initiated by giving them any activity that they are interested in. In contrast, social involvement requires interactive, active involvement and mutual understanding. This form of social interaction also creates a context, where cultural norms can be shared and discussed. In addition, this social interaction creates the emotional bonding that is needed to create a sense of belonging to a community. This sense of belonging can also meet our most fundamental human needs of identity, trust, and support (Nguyen, 2025). From this perspective, games are some of the easiest tools to participate in mutual interaction.

Games facilitate communication by developing cooperation among the participants and facilitating communication and social engagement. This communication and social engagement develops an atmosphere that is more conducive for effective learning. However, Espinosa-Curiel et al. (2022) noted some barriers to using games, which include selecting a game appropriate to the audience, suppressing distractions resulting from the competitiveness element of the game, and setting the difficulty of the game at an appropriate level to maintain engagement. Nevertheless, to address nutrition issues via an innovative educational strategy, promoting healthy eating using interactive games in community kitchens might be one of the best approaches (Kato-Lin et al., 2020).

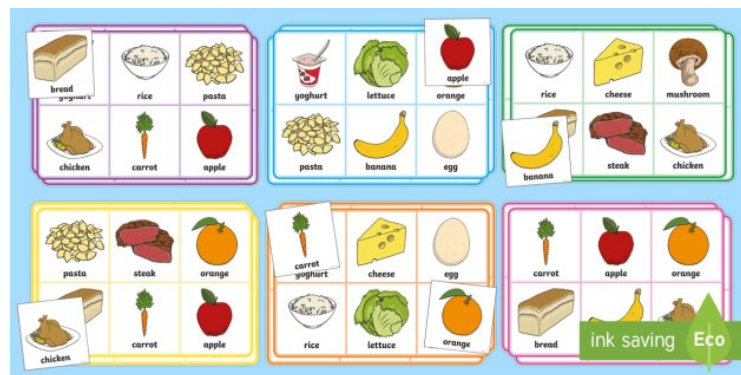


Figure 2. Healthy Food Bingo (Twinkl, n.d.).

The goal is to provide participants with the knowledge and skills needed to develop healthy lifestyle behaviors in the community by combining education and entertainment through interactive games (Espinosa-Curiel et al. 2020). The most significant value for users, specifically children, is that it expands their knowledge of healthy food. For example, with “Healthy Food Bingo”, children are learning about various vegetables, fruits, and healthy snacks while trying to accurately mark their card as they play (Figure 2). In this manner, children are motivated to learn while promoting

and developing healthy eating habits. The greatest value of such games is that they lead to an increased memory of healthy eating habits for the user while they evaluate better nutritional decisions (Kato-Lin et al., 2020).



Figure 3. Gourmet Burger Builder (AHDB, n.d.).

In “Gourmet Burger Builder” children moved through a game function of selecting and sorting ingredients, mixing, and cooking, and therefore are able to process different techniques they may use in their real-world scenario (Figure 3.). The goal then promotes children making their own meals and encouraging them to use healthy ingredients they learned about in other games, while also encouraging explosions in their own nutrition knowledge and practical skills by learning a stepwise process for cooking within a video game (Aziz,2023).

The intrinsic motivational value of interactivity in educational gaming holds some appeal to the participants which leads them to adopt or practice healthy eating habits. The addition of edutainment elements in nutrition education ensures that children and adults are attracted to the community kitchen and that the learning process is more enjoyable. Furthermore, the challenging aspect of the games ensures that an individual would prefer making better food choices and preparation methods, impacting the development of a broader general culture of healthiness among the individuals in the community (Limone et al. 2022).

By cooperative game mechanisms, people are equipped with cooperation for common goals, sharing of information and skills, and encouraging each other to improve food choices. Not only does such socialization intensify learning, but also community kitchens become friendlier and more inclusive by empowering social relationships among stakeholders (Iacovou et al., 2013).

2.3. User-Centered Game Design

Fundamental to the concept of design is the notion of applying user-centered design principles. This necessitates understanding the needs, motivations, and difficulties users face when reaching towards the target audience. The goals and experiences of potential

users should be examined in relation to usability and accessibility principles. Later on, as the design starts to evolve, the stages of prototyping and user feedback are essential to the design. This contributory mechanism is important for providing feedback on potential problem areas early on in the game and ultimately for enhancing user satisfaction. In this regard, continuous iterations and evaluation processes are components that meaningfully contribute to the quality of the outcome of the final product (Crossley et al., 2016).

An aspect to consider with a game-based learning platform is whether the difficulty of the game is also set to the correct level. Existing literature has suggested that if the game is too difficult, it can lead users to frustration and feel a lack of motivation which can lead to decreased participation. Conversely if the game is too easy and does not present a challenge to the user, it eliminates motivation for learning and can result in boredom of the gaming experience. These motivational factors are important to consider when creating a more inclusive learning environment and enjoyable gaming experience, user the possibility of substantiating the game for the targeted user with an alternative level of difficulty (Aponte et al., 2011).

3. Method and Methodology

This study examines the development of an interactive game to reinforce social connections and foster healthy eating behaviors in community kitchens. It is well-established that when people come together, social connections are formed through social interaction which strengthens feelings of belonging and trust. In this setting, community kitchens are designed for not only providing a place to access food but are social venues to facilitate social interaction. The overall goal of the work is to integrate gamification components in these settings that will facilitate conversations among user participants, contextualize the learning of healthy eating behaviors, and contribute to individuals' development in healthier eating behaviors.

3.1.Method

Gamification is important in this context with its components that help with making things easier to remember, encourage communication, and increase motivation to learn. In this research, an interactive game was developed for user participants in the community kitchen's entertainment area for participants to adopt and build healthy lifestyle habits. The design process was developed using UX design principles. The first step was to develop a user persona to represent the intended user participants needs, goals, motivations, and frustrations. A user journey map was prepared accordingly, and the user's experience flow in the kitchen area was analyzed. In addition, a general user flow diagram covering different user types from the moment they enter the kitchen was developed.

The goal is to allow users who want to engage in the community kitchen and socialize to be provided information about healthy living while also entertaining them during their time in the space. The healthy living information is also designed to help them repeat the information so that it becomes more of a habitual behavior. One of the best ways to achieve this is to use gamification. According to the flow chart below, after reaching the community kitchen, user will heading toward the socialization area after the registration/welcome area. There will be an element on the screen that prompts the user to take action, such as “Sees signage or digital screen promoting ‘Healthy Eating Challenge’.” We will offer the user different game types such as “Quiz, Build a meal, World food match” and give them the opportunity to choose. The important thing here is that each of these games brings interactive learning (Figure 5.).

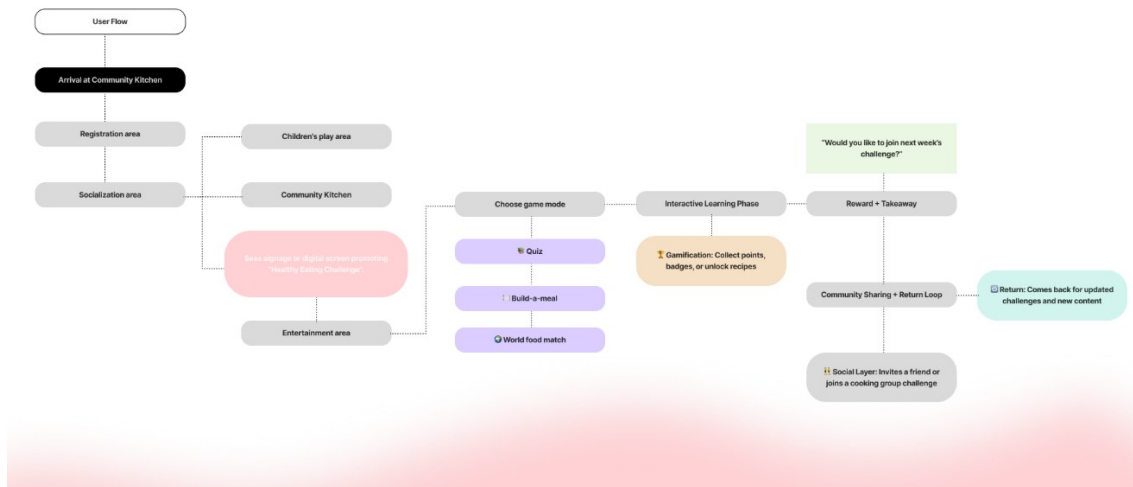


Figure 5. User flow

According to the user flow diagram, the interaction follows a cyclical structure, progressing through a series of stages. The process begins with the “Interactive Learning Phase” and progresses to the “Reward + Takeaway” and then the “Community Sharing + Return Loop” phases. At the end of this cycle, users can invite friends or join a cooking group through a “Social Layer.” The flow is completed with a “Return” point that encourages users to return to the platform for current challenges and new content. This framework encourages users to stay engaged continuously, making the platform a sustainable community hub.

4.3. Creating User Personas and User Journey Maps

User personas enable us to become familiar with the project more intensely by examining the user flow deeper and fitting it into a specific user. Therefore, for this project, a persona named Aylin Demir was created. Aylin Demir is a 28-year-old user studying a postgraduate program in Hamburg. She is an advocate of healthy food and greenery but is unable to make balanced food items due to her busy class schedule. She does not like to cook alone and goes to a nearby community kitchen to mingle. The main

reason Aylin took the class is the way she can eat healthy even with no time and the way she can get energized by mingling. (Figure 6.)

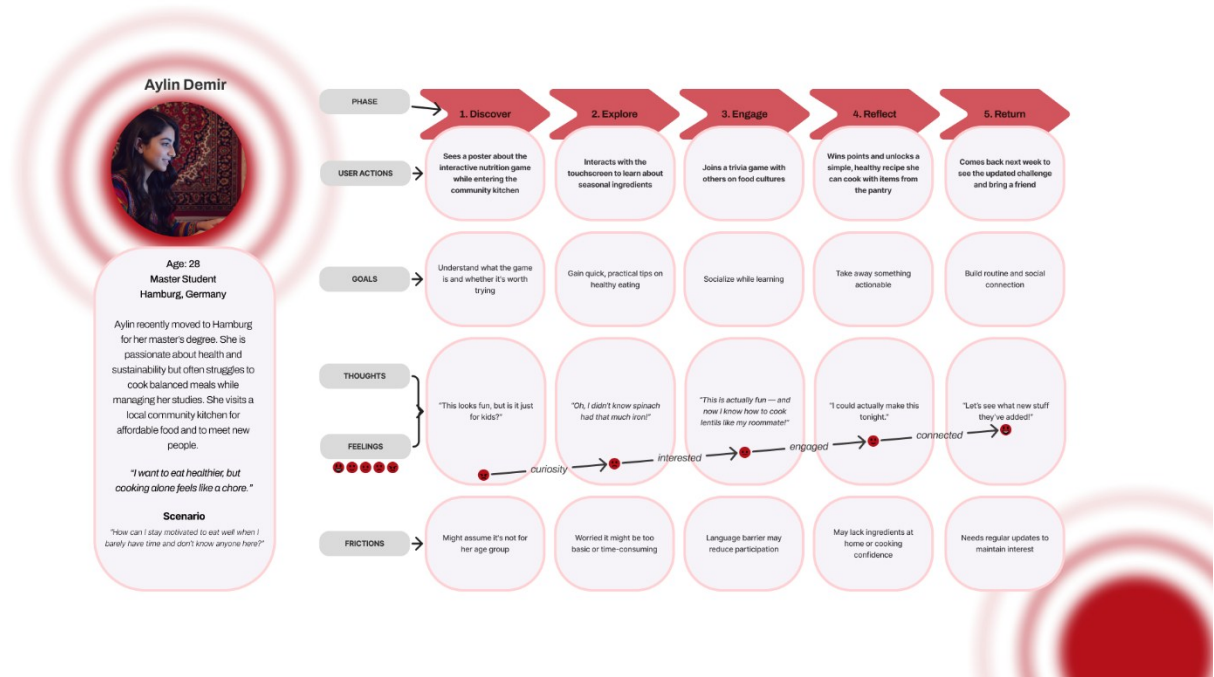


Figure 6. User persona and user journey map

Aylin's journey begins when she sees a poster on an interactive cooking game; even though she questions whether the game is for her at first, she becomes interested in the touchscreen out of curiosity. The game provides her with valuable information about seasonal ingredients, which interests her even more. The journey continues when she interacts with others by participating in a quiz, learning how enjoyable the game was. Finally, based on the points that she earns, she gets a recipe of good food that she can make with the ingredients in her home and finds useful. This becomes Aylin's inspiration and leads her to return the following week for new tasks and bring along a friend, thus creating social contact and habit formation. This enables her to transition from the idea of healthy eating as a chore to one whereby it becomes a social fun experience. (Figure 6.)

4.4. Designing an Interactive Game for the Community Kitchen

Prior to developing a game for healthy eating habits, a mood board was made to explore what kinds of work has taken place in this space historically and in the present. Since an interactive element was to be designed, attention was paid to what kinds of elements exist in public spaces. As a result, some keywords such as "immersive experience, better together, table, interactive display, socializing" became the basis for the game. (Figure 7.)

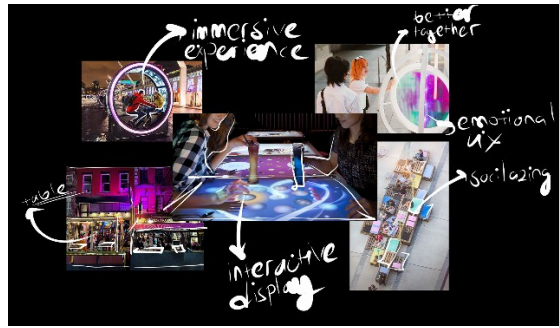


Figure 7. Moodboard

The next step from this mood board became converting those notes into a sketch (Figure 8.). Based off of those keywords, an interactive display was developed for a two-player social experience. The intent was to think of people gathering around a table not to eat, but to play a game. The wireframes for the game were sketched out in Lofi wireframe format prior to implementation (Figure 9.). Accordingly, more detail became decided to indicate what types of elements would be included and how the interactive display would be developed. The game called "Cook & Connect" eventually provided both players with a space to interactively prepare their meals.

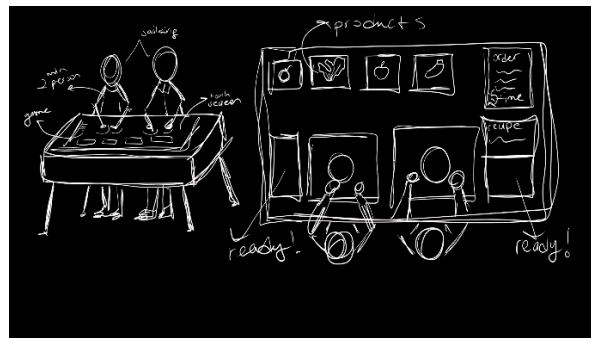


Figure 8. Sketch

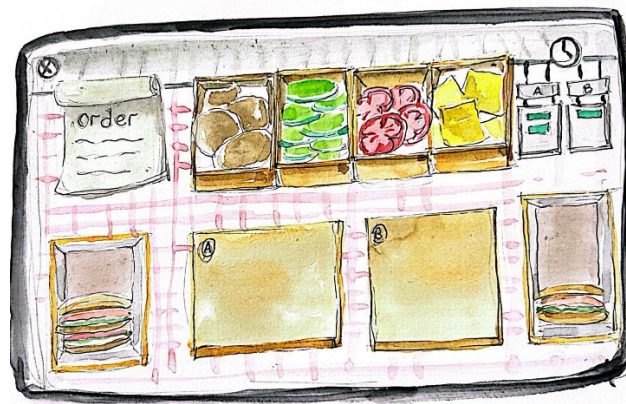


Figure 9. Lofi wireframe

Rangements of food items situated an equal distance from both users on the upper portion of the screen. In the top left, there is a display stating, "order." The game must correctly complete the order within a time constraint for two people. For example, an order could say "2 tomatoes, one green salad, one cheese sandwich," while another could say "2 cheese sandwiches and 1 green salad sandwich." This will teach users different healthy sandwich recipes and show him or her how to create healthy sandwiches for him or her, to snack on in his or her daily lives. The top right side displays the number of sandwiches each user, A or B, has made. The user just left of the screen can see how much time is left (Figure 10.).



Figure 10. User interface

4.5. Limitations

The research was relegated to a single interactive game design, although prototypes in the entertainment area were considered such as a taboo game where healthy food names would be expressed, or a true or false screen, the study is focusing on a screen design of "Cook&Connect" for two players. This interactive game requires the two participants to collaboratively construct a healthy sandwich, allowing for social interaction and recognition of healthy eating behaviours.

5. Conclusion

A community is individuals who come together around shared goals or ideals. Community kitchens are distinctive in that they are spaces where individuals come to socialize, beyond and above the function of delivering the individual's most fundamental nutritional requirement. The main aim of this project is to encourage proper eating habits among users of community kitchens by introducing interactive features in the

entertainment section as well as offering them a medium where they can utilize their time constructively.

Gamification features have been utilized instead of traditional training methodology for the purpose of making the learning experience more motivational and interesting. This is for the purpose of increasing active user participation and maintaining healthy cooking knowledge. The reason the game is playable by two people is also another social aspect. Since players work together in an effort to complete the game within a time frame, they will have an opportunity to interact with other players and share experiences. Besides, the real-life payoff of what is learned is also improved by encouraging users to apply the recipes obtained in the game to real life.

There will be a need for certain strategic efforts in the future in order for such interactive games to become popular. Producing quality educational games and publishing them to the masses is very expensive. This state of affairs prioritizes offering equal access to these tools for all, including in community kitchens. Equal access is a bare minimum requirement for game-based learning programs to continue. Further, to enable such game-enabled learning initiatives to operate continuously, there exists a feasible funding model that can be implemented either through partnerships with local communities or utilizing maximum available community resources. These steps will enable community kitchens to be imaginative centers of both nutrition and social growth.

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