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An implementation framework for transformative gamification services

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ABSTRACT
Gamification services are hailed as effective tools for influencing users’ behaviours, increasing engagement, motivation, and enhancing learning. In the field of behaviour change, transformative outcomes have been reported for gamification services; with some conceptualisation undertaken regarding transformative gamification services. However, there is a lack of research on practical implementation of transformative gamification services. Also, previous studies have often isolated a single component of gamification and not discussed the synergistic effects and behavioural outcomes of the experiences that the combination of gamification elements can create. To bridge this gap, we provide an implementation framework for transformative gamification services. This is achieved by identifying different components of transformative gamification from a social marketing and transformative service research (TSR) lens and their behavioural outcomes. To do this, we delve into game design, gamification and behaviour change literature and suggest a practical implementation framework which incorporates users’ perspectives in the form of transformative values, user engagement types (play typologies), and consumption/service encounter experiences. This research contributes to gamification theory and practice by furthering the understanding of transformative gamification services in social marketing and TSR. It also provides behaviour change practitioners with detailed steps for implementation of such services aiming to create positive behavioural changes.

1. Introduction

Gamification was first introduced by Deterding et al. (2011) as the use of game design elements in non-game contexts. Since then, it has been used in several areas of research and has hailed as an effective behaviour change tool due to its ability to encourage pro-environmental and pro-social behaviours that lead to positive health and well-being outcomes (Johnson et al. 2016; 2017). Gamification has gained significant interest in different areas of research such as marketing for behaviour change (social marketing) (Mitchell, Schuster, and Drennan 2017), services marketing (Huotari and Hamari 2017), commercial marketing (Noorbehbahani, Salehi, and Jafar Zadeh 2019), education (Dicheva et al. 2015) and health promotion (Edwards et al. 2016). Consequently, with gamification’s use in multiple disciplines, its definition has evolved. For example, Hamari (2019) provided an alternative definition of gamification focusing more on the experiences that can be created through the application of game elements. They defined gamification as ‘an intentional process of transforming any activity, system, service, product or organisational structure into one which affords positive experiences, skills and practices similar to those afforded by games’ (Hamari 2019, 1). In addition, education literature suggests that over-emphasis of the Deterding et al. (2011)’s definition on external rewards and incentives diminishes intrinsic motivation. Instead to achieve the best educational outcomes, focusing on the play side of gamification is suggested (Hughes and Lacy 2016; Tulloch 2014). In services marketing, a shift of focus from game elements to providing a gameful service encounter has been put forward. In services marketing, gamification is defined as ‘a process of enhancing a service with affordances for gameful experiences in order to support user’s overall value creation’ (Huotari and Hamari 2012, 19).

In social marketing, the terms gamification and serious games – defined as games that have other serious intentions beside fun and entertainment (Landers 2014) – are inextricably intertwined and sometimes used interchangeably. In social marketing literature, gamification is defined as the use of games
elements for behaviour change purposes such as improving social, environmental and health-related behaviours (Dietrich, Mulcahy, and Knox 2018). Such social marketing games are herein labelled as gamification to provide more clarity and avoid confusion for the readers.

However, previous studies identify a number of caveats, including overdependence of gamification on external rewards, its short life cycle, lack of long-term behaviour change, limitations, in creating value for users and unintended negative side effects (Hamari, Koivisto, and Sarsa 2014; Hughes and Lacy 2016; Johnson et al. 2017; Mulcahy, Russell-Bennett, and Rundle-Thiele 2015; Rapp et al. 2019; Tulloch 2014). Research striving to address those caveats and enhance effectiveness of gamification has led to the emergence of concepts such as ‘transformative gamification’. Transformative gamification is inspired by social marketing and transformative services research (TSR) paradigm and is defined as gamification services which focus on creating and maintaining uplifting changes in consumers’ performances of health and well-being behaviours (Tanouri, Mulcahy, and Russell-Bennett 2019). By incorporating a TSR lens to gamification, this research seeks to offer additional opportunities to behaviour change through gamification in a number of ways. First, exploring gamification from a service marketing lens, this paper strives to shift the focus of gamification from merely being a change intervention to being a change-inducing and empowerment service. Second, it can addresses some of the aforementioned caveats since TSR is not only concerned about behaviour change but also minimising harm, well-being of users in service encounters, and creating value and meaningful experiences in collaboration with service users (Cronin 2016; Russell-Bennett et al. 2019).

Previous studies have delved into the nature of transformative gamification and conceptualised this concept from a service perspective (Tanouri, Kennedy, and Veer 2021). However, the majority of previous research focus on isolated design elements and their impacts on motivation and behaviour (Alswaayer 2018; Deterding 2012; Dietrich, Mulcahy, and Knox 2018). Thus there seems to be a need to investigate transformative gamification holistically by incorporating multiple design and behavioural aspects. Furthermore, including service marketing and TSR perspectives to gamification entails further emphasis on understanding users’ perspectives, value co-creation and service encounter experiences (Larivière et al. 2017) in implementation of transformative gamification services. As such this research aims to:

1. Identify how transformative gamification can bring about behavioural outcomes
2. Identify the components of transformative gamification services from a TSR and social marketing lens and the behavioural outcomes they can give rise to
3. Introduce an implementation framework consists of a set of practical propositions to support operationalisation of transformative gamification services considering the intersectionality in the concept of transformative gamification.

It should also be mentioned that what is meant by implementation framework in this paper is a set of recommendations for social marketers, service marketers and gamification designers for implementing transformative gamification services informed by a transformative approach. It differs from previous frameworks as it aims to provide a more holistic understanding of various aspects of transformative gamification, i.e. it is built based on experiences, value co-creation and behavioural pathways rather than isolated gamification elements and their effects.

To achieve these research purposes, we first elucidate the range of behavioural outcomes that can be achieved through transformative gamification services. Second, we break down transformative gamification into its main components (sensory, hedonic and reflective) and delve into social marketing (the use of marketing concepts to drive positive individual and societal change), TSR and gamification literature (which form the backbone of transformative gamification) to investigate the behaviour change related outcomes that can be achieved by each component. Third, we explore different play typologies to uncover the links between different user engagement types, components of transformative gamification, consumption experiences and behavioural outcomes. Lastly, drawing on a comprehensive synthesis of literature, we offer a framework to assist behaviour change researchers and practitioners in design and implementation of transformative gamification services.

This paper contributes to both our understanding of gamification effects on behavioural performances and design elements that can support transformative gamification. This research advances the limited literature on the intersection of user engagement types (play types), design elements (gamification components) and different users’ consumption experiences (Aleksandrovna 2020; Argilés and Chou 2019; Leclercq, Poncin, and Hammeci 2020; Monerrat et al. 2015) and suggests a practical framework for transformative gamification services and bring about positive behavioural outcomes. The contributions of our proposed framework include (1) taking into account all of the components of gamification services, (2) linking all gamification components to the behavioural outcomes and experiences they can
generate, (3) exploring the experiences each gamification component can provide and (4) linking associated engagement types (play typologies) to each gamification component.

2. Method and conceptualisation approach

As stated earlier, this research is based on assimilating previous gamification-related research to introduce a holistic and higher-level conceptualisation specifically for transformative gamification. The conceptual contributions of this article then are created through engaging with current literature and using logical and deductive reasoning to form unique insights and form an implementation framework (MacInnis 2011). This is classed as a conceptual theory-in-formation method (Lacznik and Shultz 2020) within the context of discovery (Yadav 2010). Taking this approach, new theory is proposed by synthesising current literature to propose new conceptual relationships. This proposition-based style of theorising is supported in the literature (Cornelissen 2016) and does not require hypothesis generation or testing (Hunt 1971). According to Hunt (1971) theoretical schemata, the propositions given here can be considered as theory because they can be operationally defined and are systematically related to one another. This provides room for future researchers to develop and test hypotheses based on these propositions.

As such, literature was reviewed that identified best practice along with that which focused on transformative outcomes. Multiple disciplines were consulted including gamification, game studies, marketing and marketing for behaviour change. Afterwards, drawing upon the findings of previous research, using logical reasoning and deduction to synthesise and integrate the literature, we put forward an implementation framework which is particularly applicable to transformative gamification services. Such an approach in conceptualisation is particularly utilised and accepted in marketing, social marketing and consumer research (Berry, Seiders, and Grewal 2002; Kennedy, Jones, and Williams 2019; Kubacki, Siemieniako, and Brennan 2020; Srivastava, Shervani, and Fahey 1998).

3. What to expect from transformative gamification services and how to achieve them?

3.1. Outcomes of transformative gamification services

The concept of transformative gamification in its essence is a TSR and social marketing concept (Tanouri, Kennedy, and Veer 2021; Tanouri, Mulcahy, and Russell-Bennett 2019). Therefore, first, desired behavioural outcomes according to marketing for behaviour change and TSR are explained below. Following that, it will be explained how such outcomes can be achieved through transformative gamification services.

Social marketing seeks to develop and integrate marketing concepts with other approaches to influence behaviours that benefit individuals and communities for the greater social good (Australian Association of Social Marketing 2013). The main aim of social marketing is therefore to influence behaviour through creation or exchange of value (French and Russell-Bennett 2015; Kennedy and Parsons 2014; National Social Marketing Centre 2016). According to the definition of gamification in social marketing, gamification is considered as the use of game elements to achieve the just-mentioned exchange and creation of value to bring about behaviour change (Dietrich, Mulcahy, and Knox 2018). As such, what can be construed as desired behavioural outcomes of gamification from a social marketing perspective are those that involve change and/or maintenance of a well-being related behaviour. Therefore, it can cover a range of outcomes including but not limited to adoption of healthy behaviours, intention to change unhealthy behaviours, maintenance of healthy behaviours and changes in attitudes toward certain behaviours.

TSR on the other hand is defined as ‘the integration of consumer and service research that centres on creating uplifting changes and improvements in well-being of individuals, families, social networks, communities, cities, nations, collectives, and ecosystems’ (Anderson, Ostrom, and Bitner 2011, 3; Rosenbaum et al. 2011). In addition, as indicated by Russell-Bennett et al. (2019), along with the behavioural outcomes discussed earlier, TSR is also concerned with outcomes that are related to well-being of service users. Therefore, since the definition of transformative gamification includes both social marketing and services marketing perspectives (Tanouri, Kennedy, and Veer 2021), the desired outcome of transformative gamification should include the above-mentioned social marketing outcomes, plus TSR outcomes. Such TSR outcomes include avoiding/minimising negative outcomes of service use, positive outcomes achieved through service (gamification) encounters and improvements in consumers’ well-being performances as a result of service (gamification) encounters.

As explained above, barring some differences, TSR and social marketing outcomes are similar in nature. Russell-Bennett et al. (2019) indicated that although TSR and social marketing are considered distinct subfields of marketing, they share common interests and
converging pathways to social change. Therefore, in the remainder of this research, instead of focusing on the differences of TSR and social marketing, we focus on the shared interests of those two disciplines and will consider both TSR and social marketing outcomes as the desired outcomes of transformative gamification services.

3.2. Behavioural pathways in transformative gamification services

As outlined in Section 4.1, since transformative gamification is supported by TSR and social marketing, pathways to behavioural change in such services can be explored in terms of experiences, instances of value co-creation and service encounters. As such, this section delves into previous research to introduce dimensions of value and different types of experiences to set as behavioural pathways of transformative gamification.

Transformative gamification services create behaviour change through five mechanisms: value creation, user orientation, social support, creating enjoyable service encounters and supporting vulnerable consumers (Mulcahy et al. 2018; Tanouri, Mulcahy, and Russell-Bennett 2019). Furthermore, Mulcahy, Zainuddin, and Russell-Bennett (2020) indicated that transformative gamification services should be able to create transformative value to achieve positive behavioural outcomes. They suggested three dimensions for transformative value in gamification: (1) knowledge – increasing users’ knowledge and awareness about well-being behaviours; (2) distraction – the ability of gamification services to divert users’ attention from discomfort and the urge to perform undesired behaviours; and (3) simulation – providing experiences for users to test different outcomes and scenarios in a gamification environment and observe the cause-and-effect linkage of their behaviours (Mulcahy, Zainuddin, and Russell-Bennett 2020). The definition of the simulation value provided by Mulcahy, Zainuddin, and Russell-Bennett (2020) is similar with what has been suggested as a reflective experience in other studies (Fleming et al. 2011; Stallard 2018; Tanouri, Kennedy, and Veer 2021).

The aforementioned three transformative values have also been discussed in previous research in the area of transformation. For example, Tanouri, Kennedy, and Veer (2021) suggested reflection and knowledge acquisition as two salient elements of transformative gamification services. Moreover, Alterio (2011) underpinned the importance of providing users with reflective experiences to create transformative change. Therefore, it can be inferred that apart from directly influencing behaviours and intentions, transformative gamification services can achieve behavioural and well-being-related outcomes through providing users with three different opportunities as educational, distractive and reflective opportunities (Mulcahy, Zainuddin, and Russell-Bennett 2020).

Furthermore, as suggested earlier, the concept of transformative gamification is inspired by TSR paradigm which put a great emphasis on user-to-service interactions, users’ input and service encounter experiences (Ostrom, Mathras, and Anderson 2014; Rosenbaum 2015; Russell-Bennett et al. 2019). Therefore, investigating the ways users interact with gamification services is as important and complementary to exploring the ways gamification services influence users’ behaviours. To explain the interactions of users with games and gamification services, previous studies have suggested several typologies that can be divided into two categories. The first category is the user type category. This category includes typologies such as Brain-Hex (Nacke, Bateman, and Mandryk 2011) and Hexad (Marczewska 2015; Tondello et al. 2016) and other typologies introduced by researchers such as Bartle (1996), Tseng (2011), Drachen, Canossa, and Yannakakis (2009) and Stewart (2011). Reviewing previous studies on user typologies reveals that all of the existing typologies are developed for serious games, video games and massively multiplayer online games (Hamari and Tuunanen 2014). Furthermore, those typologies often explain the ways users behave toward games according to their personality traits and provide limited insight about how games influence users.

The second category can be regarded as the gameplay experience category. This category includes typologies that are associated with different experiences and opportunities that games and gamification services provide for users such as typologies introduced by Zackarias, Wahlin, and Wilson (2010), Lazzaro (2004) and Leclercq, Poncin, and Hammedi (2020). This category is relevant to the context of this study because the experiences of interacting with services, and the consequences of such interactions are the focus of TSR and social marketing (Alkire et al. 2019; Anderson and Ostrom 2015; Blair 1995; Brennan et al. 2014; Eagle et al. 2013). Moreover, among the typologies suggested under this category, Leclercq, Poncin, and Hammedi (2020)’s gameplay experience typology is the only one that is developed for gamification (and not video games) and is based on a service marketing perspective. This four-dimensional typology explains different types of users’ interaction with gamification services as well as users’ motivation to get engaged with such services. Using a microfoundational approach, Leclercq, Poncin, and Hammedi (2020) explored the interrelations between
users, contextual factors and social outcomes that can be achieved via gamification services. This typology identifies four types of play and classifies them based on two criteria:

1) Whether users use gamification services to complement their resources (knowledge, skills, emotions, etc.) or they structure their resources to match with gamification design (Leclercq, Poncin, and Hammedi 2020). An example of complementing resources is when the users of a mental well-being booster gamified app use what they have learned from the app’s educational materials to improve their mental well-being and change their habits in real world. On the other hand, structuring resources is when users only adopt the behaviours that make them winners in gamification services. Simply put, in the first case, users use the meaning they have received to improve their lives, but in the second case, they structure their lives based on gamification rules and conduct behaviours which make them winners.

2) Whether users are engaged with the gamified task or with the gamification design (Leclercq, Poncin, and Hammedi 2020). For example, in the case of the mental well-being gamified app discussed earlier, some users may wish to get engaged with the gamified task and use/apply what they have learned via the gamified app in real world. On the other hand, some users might engage with gamification design and focus on collecting points, trophies, increasing their status and the enjoyment they receive from playing.

Based on those two criteria, four different types of gameplay in gamification services were suggested by Leclercq, Poncin, and Hammedi (2020). Table 1 shows a brief description of the four gameplay types. As stated earlier, due to the focus of this typology on gameplay experiences (which is emphasised in TSR and social marketing), its service marketing perspective (which is relevant to transformative gamification), and its special applicability to gamification (which is relevant to the scope of the current research), this typology will be used to aid further conceptualisations in this paper.

Having identified the dimensions of value in transformative gamification services as well as different types of users’ engagements with such services, the next piece that needs to be identified to be able to suggest our implementation framework is identifying how gamification service designers can make use of the tools that gamification provides to them to create encounter/consumption experiences that can lead to such value creation and user engagements. Therefore, the next section delves into gamification and game studies literature to identify relevant components of gamification to help designers create different types of well-being inducing experiences.

4. Components of games and gamification

Transformative gamification is a newly emerged concept, and little is known about its main components. Previous research has highlighted the necessity of tapping into game design literature to conceptualise gamification-related concepts due to the breadth and depth of game research in computer science as well as gamification having roots in game studies (Costa et al. 2017). Such approach is also in line with Hamari (2019) definition of gamification discussed in Section 2, as they suggest gamification as an umbrella concept which can encompass similar areas such as serious games, game-based learning, persuasive technology, exergames and so forth. As such with regard to the relationship between games and gamification in this research, it should be stated that although the focus of this research is on gamification, we extrapolate on previous game studies as well to gain further insights into the current conceptualisation. Therefore, in this section a review of germane gamification and game design studies has been provided to do just that. It should, however, be noted that although gamification’s focus is often on motivational affordances rather than components, due to the adoption of Hamari (2019)’s definition of gamification as well as theoretical underpinnings of transformative gamification (social marketing and TSR), this research put a particular emphasis on

<table>
<thead>
<tr>
<th>Play type</th>
<th>Description</th>
<th>Interaction’s motive</th>
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<tbody>
<tr>
<td>Easy play</td>
<td>Users’ engagement with design elements and environment</td>
<td>Discovery</td>
</tr>
<tr>
<td>Hard play</td>
<td>Users structure their resources to match with gamification rules. Progress in gamification environment is more important than what is being gamified (e.g. a behaviour). Possibility of losing purpose</td>
<td>Challenge</td>
</tr>
<tr>
<td>Serious play</td>
<td>Using resources provided by gamification services to perform the tasks encouraged by them. May include collaboration and interaction with other entities in gamification environment</td>
<td>Accomplishment</td>
</tr>
<tr>
<td>Interactive</td>
<td>Users structure their resources to match with the tasks that gamification service encourage</td>
<td>Empowerment</td>
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</table>
component, experiences and outcomes of transformative gamification. Therefore, we suggest that these components contribute to overall behavioural and well-being performances from gamification services and combine to provide practical implementation framework later in this paper. As such, this section first provides a review of different classifications of gamification components from different perspectives (game design, gamification and social marketing). Afterwards, we provide a critical review and extrapolate on those classifications to put forward a unique classification for transformative gamification services.

With regards to gamification, the most widely-used classification is Hofacker et al. (2016)’s classification in which they categorised gamification components as aesthetics, mechanics, technology and story. Similar categorisations were also introduced by Robson et al. (2015) and Mullins and Sabherwal (2020) based on mechanics, dynamics and emotions (known as MDE framework). Likewise, Zichermann and Cunningham (2011) proposed a framework consisted of three components as mechanics, dynamics and aesthetics. Similarly, Werbach and Hunter (2012) proposed three building blocks for gamification as dynamics, mechanics and components. Moreover, Chou (2013) introduced a more detailed classification and categorised gamification’s components based on eight drives namely epic meaning, accomplishment, empowerment, ownership, social influence, scarcity, unpredictability and avoidance. Chou (2013) framework is particularly different from the other frameworks since it uses different drives to create different classifications as opposed to the others which focus on introducing classifications based on elements (a brief description of each component of the aforementioned frameworks can be found in Table 3).

In game studies literature, however, similar classifications for components of games can be found. Which makes sense due to the fact that most gamification classifications are inspired by previous game design studies. For example, Chorney (2013) divided the components of games into two categories: content and mechanics. Content includes the imaginary game world, storyline, information and experiences provided by the game. Mechanics are referred to as the tools used by game designers to operationalise game content and add structure to the game – such as with reward systems, challenges, feedback, etc. (Chorney 2013). Wang, Shen, and Ritterfeld (2009) introduced a more detailed classification of game components in a study on enjoyment. They broke down games into five components namely technological capacity, game design, aesthetic presentation, game experience and narrativity (Wang, Shen, and Ritterfeld 2009). Table 2 provides a brief description of the five dimensions and their factors.

Furthermore, in the field of social marketing, previous studies such as Dietrich, Mulcahy, and Knox (2018); Johnson et al. (2017); Whittaker, Russell-Bennett, and Mulcahy (2021) suggested a classification for gamification components based on reward-based

<table>
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<tr>
<th>Table 2. Dimensions of digital games (Wang, Shen, and Ritterfeld 2009).</th>
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<tr>
<td><strong>Dimension</strong></td>
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<tr>
<td>Technological capacity</td>
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<tr>
<td>Aesthetic presentation</td>
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<td>Entertainment gameplay experience</td>
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<td>Narrativity</td>
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versus meaningful elements of gamification. They suggested elements and mechanics such as points, badges, trophies and challenges as the elements of reward-based component and elements such as educational message, functionality, interactivity, stories, aesthetics and control as the elements of meaningful component (Dietrich, Mulcahy, and Knox 2018; Johnson et al. 2017; Whittaker, Russell-Bennett, and Mulcahy 2021). Although this classification provides valuable insight into the transformative application of gamification and shares similarities with the current research, it differs from our conceptualisation in several ways.

While the aforementioned classifications (Table 2 and Table 3) provide significant insight into how different dimensions of games and gamification work, there are a number of reasons which entail developing a unique classification for transformative gamification services. First, reviewing those and other similar classifications, it can be revealed that some of them are developed for games and with a design perspective and not gamification services and with a service perspective. That is, those classifications are build according to the main desirable outcome of games which is entertainment and enjoyment (Chang, Wang, and Yang 2009; Chorney 2013; Wang, Shen, and Ritterfeld 2009). Therefore, they often discount well-being and behavioural outcomes.

Furthermore, those which are relevant to gamification do not necessarily focus on bringing about societal and well-being outcomes. For example, although Zichermann and Cunningham (2011) and Chou (2013) classifications, consider behavioural outcomes as the main desired outcomes, they still lack a social marketing and TSR perspective to well-being and are developed with a game design perspective. Furthermore, Hofacker et al. (2016)’s and Werbach and Hunter (2012)’s classifications are specific to commercial marketing outcomes such as engagement, purchase, repurchase, retention, organisational productivity and so on. Moreover, the focus of classifications which are based on the MDE framework is often on outcomes such as emotions and cognitions (Mullins and Sabherwal 2020; Robson et al. 2015). Whilst, as stated earlier, in transformative gamification (which is based on TSR and social marketing), desired outcomes are experiences which lead to well-being and behavioural changes, and their associated values.

Second, an in-depth review of formerly developed classifications reveals that in most cases the focus and the unit of analysis in those classifications are on gamification elements and their outcomes and applications. Whilst TSR and social marketing disciplines are more concerned with service encounter experiences and their associated outcomes, i.e. investigating ‘which experiences can lead to which well-being, societal and behavioural outcomes?’ Therefore, developing a classification that is relevant and applicable to transformative gamification (and subsequently TSR and social marketing) entails a change in the unit of analysis from ‘gamification elements’ to ‘experiences’.

Furthermore, particularly in relation to ‘reward-based vs meaningful’ classification, shifting from investigating gamification effects in terms of elements to experiences can be significantly beneficial. In previous studies, reward-based component and meaningful component are often considered as distinct parallel or opposing components of gamification (Whittaker, Russell-Bennett, and Mulcahy 2021). Subsequently, mixed results have been reported from studies striving to investigate which single component is more influential in bringing about behavioural changes (Dietrich, Mulcahy, and Knox 2018; Johnson et al. 2017; Whittaker, Russell-Bennett, and Mulcahy 2021). However, we suggest our proposed way of investigating gamification in terms of experiences and introducing components based on the experiences they can create will address this gap. According to service design literature, experiences are created and then upgraded as users interact with different elements of a service (here the gamification service) (Fitzsimmons and Fitzsimmons 2000). Therefore, instead of introducing gamification components that are discreet and based on gamification elements, a services marketing perspective entails introduction of components that are built upon each other to create and upgrade user/consumption experiences. This way, the transformative power of gamification is defined based on the aggregate effect of the components that have created different experiences rather than certain isolated elements. Section 9 provides more details about different experiences once the components of transformative gamification are introduced and delineated.

As such, this paper builds upon previous classifications in both gamification and game studies as shown in Table 3 and extrapolates their use of game/gamification dimensions beyond design per se to apply to transformative gamification through behaviour change and service research and provides a higher order classification based on experiences that different sets of gamification elements can create for users as well as engagement types and value dimensions. Table 3 briefly shows the previous classifications.

Doing so, we investigate previous classifications in the fields of gamification and game studies as well as previous social marketing and TSR studies to identify
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Components</th>
<th>Description</th>
<th>Game or gamification</th>
<th>Area of study/nature of desired outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chorney (2013)</td>
<td>Content</td>
<td>Imaginary game world, storyline, information, and experiences provided by the game</td>
<td>Games</td>
<td>Entertainment</td>
</tr>
<tr>
<td>Hofacker et al. (2016)</td>
<td>Aesthetics</td>
<td>Audio–visual aspects of gamification and the way it looks</td>
<td>Gamification</td>
<td>Mobile Marketing/engagement, purchase, retention, repeat purchase intention</td>
</tr>
<tr>
<td>Mullins and Sabherwal (2020); Robson et al. (2015)</td>
<td>Mechanics</td>
<td>Procedures, rules, and the gamification reward mechanisms</td>
<td>Gamification</td>
<td>Emotional outcomes &amp; motivation</td>
</tr>
<tr>
<td>Wang, Shen, and Ritterfeld (2009)</td>
<td>Story</td>
<td>Storytelling and genre of gamification</td>
<td>Games</td>
<td>Entertainment and enjoyment</td>
</tr>
<tr>
<td>Werbach and Hunter (2012)</td>
<td>Dynamics</td>
<td>Aspects that should be managed by the designers but are not directly entered into the gamification environment such as constraints, emotions, narrative, progression, and relationships</td>
<td>Gamification</td>
<td>Business / motivation, engagement</td>
</tr>
<tr>
<td>Chou (2013)</td>
<td>Epic meaning</td>
<td>The drive associated with users believing they are doing something meaningful</td>
<td>Gamification</td>
<td>Behaviour, motivation, engagement</td>
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<td></td>
<td>Accomplishment</td>
<td>The drive associated with making progress, skill acquisition, and overcoming challenges</td>
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<td>Empowerment</td>
<td>The drive associated with users feeling engaged in a creative process and seeing the results of their creativity</td>
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<td>Ownership</td>
<td>The drive associated with users feeling motivated because they feel a sense of ownership toward certain aspects/elements of gamification</td>
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<tr>
<td></td>
<td>Social influence</td>
<td>The drive relating to social aspects such as companionship, mentorship, and competition</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scarcity</td>
<td>The drive relating to users want something because they cannot have it</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unpredictability</td>
<td>The drive associated to stimulating sense of curiosity in users</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Avoidance</td>
<td>The drive associated with users keep engaging to avoid losing what they have already earned in gamification services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Johnson et al. (2017), Dietrich, Mulcahy, and Knox (2018); Whittaker, Russell-Bennett, and Mulcahy (2021)</td>
<td>Reward-based</td>
<td>Elements that aim to tap into motivational drivers. Can include point, trophies, badges, challenges, feedback, leader boards, progression rewards</td>
<td>Gamification</td>
<td>Well-being / Behaviour, Motivation</td>
</tr>
<tr>
<td></td>
<td>Meaningful</td>
<td>Elements that aim to help users find personal connection and intrinsic motivation. Can include educational message, story, interactivity, reflection, simulation, controls, functionality, and aesthetics.</td>
<td></td>
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</tr>
</tbody>
</table>
different experiences that different components of games and gamification services can create. From a services research perspective, there are generally two categories of elements associated with services: function and form (Chitturi, Raghunathan, and Mahajan 2007). Function has to do with the main purpose of services. In the context of transformative gamification, the main function is to enhance consumers’ performances of health and well-being behaviours, which can be achieved either by changing/maintaining behaviours or providing the users with transformative values as discussed in Section 4 (Mulcahy, Zainuddin, and Russell-Bennett 2020; Tanouri, Mulcahy, and Russell-Bennett 2019). Moreover, reviewing transformative gamification services and previous social marketing interventions, it can be seen that the main approach often used to achieve behavioural outcomes (service function) is by encouraging users/consumers to revisit their choices of well-being behaviours using social marketing messages, narratives and stories (Mulcahy 2015; Mulcahy, Russell-Bennett, and Iacobucci 2020; Tanouri, Kennedy, and Veer 2021; Whittaker, Mulcahy, and Russell-Bennett 2021; Yam et al. 2017). This process is often referred to as a reflective experience in social science research (Alterio 2011; McDrury and Alterio 2003). Therefore, we propose a component for transformative gamification services called reflective component by categorising the gamification elements such as storyline, narrative structure and message which contribute to creating a reflective experience for users.

Furthermore, form attributes of services are associated with the hedonic and aesthetic aspects of services (Chitturi, Raghunathan, and Mahajan 2007). Form attributes contribute to fulfilment of emotional (hedonic) and sensory gratification (Wakefield and Blodgett 1999). Thus for the purpose of this research we will accordingly introduce two further components for transformative gamification services as hedonic and sensory components. In line with Holbrook and Hirschman (1982) definition of hedonic consumption, the hedonic component is therefore related to using gamification elements to create emotional enjoyment and pleasure from using gamification services. Furthermore, the sensory component is associated with using technological capabilities and audio–visual elements of gamification to improve user experience interacting with the gamification interface and contribute to sensory gratification. Our proposed definition of the sensory component is in line with the definition of sensory gratification in experiential marketing (Wiedmann, Hennigs, and Klarmann 2012), sensory design in game studies (Cardoso Garone, Nesteriuk, and Belluzzo de Campos 2020) and sensory experience in services marketing (Mahr, Stead, and Odekerken-Schröder 2019). As such, we suggest three components for transformative gamification services: sensory, hedonic and reflective.

The following sections further explain the three suggested components and build upon gamification, social marketing and services marketing research to investigate how they are applicable to transformative gamification.

5. Sensory component

Wang, Shen, and Ritterfeld (2009)’s technological capacity and aesthetic presentation dimensions and Hofacker et al. (2016)’s and Zichermann and Cunningham (2011)’s aesthetics dimension include factors such as visual and audio presentation and elements which have to do with the users’ ease of communication with gamification services; such factors are referred to in social marketing as sensory stimuli (Bedwell et al. 2012; Die- trich, Mulcahy, and Knox 2018; Wang, Shen, and Ritterfeld 2009); Similarly, Marache-Francisco and Brangier (2013) interpreted the audio, visual and presentation factors as the sensory-motor dimension of gamification services. They suggested that this dimension is mainly used to communicate an atmosphere and a theme through gamification services (Marache-Francisco and Brangier 2013). In addition, Goethe (2019b) referred to visual, aural and haptic aspects as aesthetics and suggested aesthetics as sensory phenomena. It is suggested that the sensory experience created by the gamification aesthetics can significantly elevate experiences of users and their perceptions about the quality of gamification services (Goethe 2019b). In the context of educational gamification, Rahmah and Aishah (2019) referred to the visual, auditory and technological aspects of gamification as multi-sensory aspects. They suggested that multi-sensory aspects play an important role in increasing users’ desire to learn and enhance the learning overall (Rahmah and Aishah 2019). As such, drawing upon previous gamification and behaviour change research, aspects such as audio and visual presentation, aesthetics and technological capacity will be referred to as the sensory component of transformative gamification in the proposed framework.

The sensory component of gamification includes factors such as technological capacity, aesthetic presentation, graphics, visual and audio presentation. Ermi and Mäyrä (2005) suggested that multi-sensory aspects lead to sensory immersion which is achieved when game-world’s stimuli influence users more than real-world stimuli. Although Ermi and Mäyrä (2005) research focused solely on games and not necessarily
gamification, their definition of sensory immersion seems to be applicable to gamification as well, due to the similar audio–visual aspects used in both games and gamification (e.g. graphics, audio, VR, AR, etc.). Sensory immersion focuses on creating engagement through sensational content such as sounds, graphics, visuals and perspective (Griffin 2019). Abbasi and Jamak (2017) indicated that this provocation of sensations causes playful consumption and higher user motivation to keep engaging with gamification. Sensory gamification elements are often used to create sensory-based stimulation and subsequently, pleasurable feelings and excitement about a gamified activity (Liu, Santhananam, and Webster 2017). A systematic review of several digital behaviour change interventions revealed that uptake of and engagement with digital behaviour change services not only is determined by the content those services offer but also the way the offerings are delivered (e.g. aesthetics, personalisation features, etc.) (Perski et al. 2017).

It is believed that sensory components of digital behaviour change services can significantly enhance uptake of and engagement with such services because the technological and audio–visual aspects stimulate individuals’ sense of curiosity (Szinay et al. 2020). Curiosity exists in two different forms, sensory curiosity and cognitive curiosity (Kim and Lee 2015). Sensory curiosity can be aroused in users by using audio visual effects and providing users with novel technologies in gamification services (Donovan and Lead 2012). Cognitive curiosity is aroused when users are placed in situations where they need to learn, solve problems, complement their knowledge structures and reflect on the information they have received interacting with gamification services (Svendsen, Burner, and Røkenes 2020).

As such, the initial uptake and engagement with behaviour change services is often to fulfil the sense of sensory curiosity and seeking sensory enjoyment (Çakır and Aktuglu 2020). The sensory enjoyment and sense of curiosity will, however, wear out quickly as the individuals get used to the aesthetics and become oversaturated with the technology (Adkins-Jablonsky et al. 2021). It is expected that once an environment does not provide a satisfactory level of stimulation, users will engage in exploratory behaviour and seek stimulation and excitement in other environments (Steenkamp and Baumgartner 1992). As such, the sensory component of transformative gamification services can cause initial uptake and engagement and provide a window of opportunity for gamification service designers to deliver further offerings (such as the content, well-being message and so on), keep users engaged for a longer period and subsequently increase the likelihood of behaviour change. Therefore, the pleasure and excitement achieved from sensory-based stimulation seem to be the first determinant of service uptake and initial engagement. This is important as behaviour change is a long-term process and creation of a new behaviour requires adequate uptake and sustained engagement with gamification services (Coşkun and Erbuğ 2016; Kohl, Crutzen, and de Vries 2013; Michie et al. 2017). As such, it is proposed that:

P1. The playful experience provided by the sensory component in transformative gamification can lead to enhanced uptake of and engagement with gamification services and higher likelihood of behavioural change.

Sensory components play an important role in effectiveness and adoption of gamification services, resulting in more effective behaviour change services (Meske et al. 2017). From the game design perspective, sensory stimuli can distort perceptions and lead to temporary acceptance of an alternative reality (the game world). This is a precondition for higher levels of immersion into and sustained engagement with gamification services (Bedwell et al. 2012). Moreover, Goethe (2019b) construed users’ interaction with sensory components of gamification as multimodal interaction. Multimodal interaction is suggested to have four dimensions as visual, audio, haptic and gesture. It is believed that the quality and variety of such sensory interactions can significantly influence believability of the gamified world and lead to higher levels of immersion (Goethe 2019b). Furthermore, the acceptance of the alternative reality can contribute to higher levels of immersion and subsequently distraction of individuals from their physical environment (Mulcahy, Zainuddin, and Russell-Bennett 2020). Distraction is often used in gamification services to lure users away from performing undesired competing behaviours (e.g. smoking or drinking) (Mulcahy, Russell-Bennett, and Kuhn 2014).

Similarly, Jennett (2010) suggested that sensory immersion –originating from engagement of users with sensory components – leads to increased motivation to ignore surroundings to keep enjoying the gamification consumption. Similarly, it is reported that using technologies such as virtual reality (VR) which engage more senses, can influence users’ sense of presence, and consequently, distract users from the real world (Zhai et al. 2020). Therefore, in the behaviour change context, providing users with such sensory experiences is expected to distract them from the urge to perform certain undesired behaviours. In a well-designed gamification service, such technologies can be used to create sensory immersion and distract users from performing unhealthy and undesired behaviours.
(Mulcahy, Zainuddin, and Russell-Bennett 2020). As indicated in Section 4.2, distraction value is one of the behavioural pathways in transformative services. As such, it can be postulated that:

**P2.** Sensory components of transformative gamification can contribute to distracting individuals from performing undesired behaviours.

From a marketing perspective, sensory stimuli are often at the front line of attracting consumers’ attention and engaging them with a marketing message. This has been emphasised in several classic marketing communication models such as the innovation adoption model, information processing model and hierarchy of effects model (Chitty et al. 2017) which are also used in social marketing research (Brennan et al. 2014). In addition, sensory experiences are believed to increase service satisfaction and enhance users’ curiosity towards communication messages (Lashkova, Antón, and Camarero 2020). Service satisfaction is considered both a TSR outcome (Mulcahy et al. 2018) and a social marketing outcome, since it is associated with service adoption (Dietrich et al. 2015). Sensory components positively impact gamification’s experiential value and consequently lead to higher awareness of the social marketing brand (desired behaviour) (Mulcahy, Russell-Bennett, and Rundle-Thiele 2015). According to the elaboration likelihood model, individuals involvement with processing well-being messages is an antecedent of enhanced awareness of social marketing brand (Hsu and Chang 2007).

As stated earlier, increasing users’ curiosity by tapping into sensory components of gamification (sensory curiosity) is one of the common ways of motivating users to pay attention to both gamification and game offerings (Çakir and Aktuglu 2020; Zhai et al. 2020). For instance, it has been reported that innovative technologies such as virtual reality (VR) which create high levels of sensory immersion, entice users to get engaged with and adopt game-like services through increasing curiosity (Zhai et al. 2020). This is based on the idea that once users are in the state of sensory immersion, they will be more likely to process the main well-being messages transformative gamification services offer and subsequently, it will be more likely that they adopt the behaviour change service. Therefore, this leads to the following proposition:

**P3.** Sensory components of transformative gamification help the adoption of behaviour change programmes through increasing the likelihood of the individuals processing well-being message(s) offered by gamification services.

Lastly, investigating different types of play in relation to the sensory component, it seems that there is a link between the sensory component and easy play. Easy play is referred to as a form of engagement with gamification services in which users explore such services to discover how they work, how they look like, what possibilities do they offer and how to progress in the gamified world (Leclercq, Poncin, and Hammedi 2020). In easy play, users are more interested to learn about and engage with gamification environment and its mechanics compared to its core well-being message and content (Leclercq, Poncin, and Hammedi 2020). This corroborates with the definition of sensory curiosity discussed earlier in this section (Kim and Lee 2015). This type of engagement (easy play) is also similar to how experiential value is created by the sensory elements of gamification services (Mulcahy, Russell-Bennett, and Rundle-Thiele 2015). Furthermore, the more gamification services stimulate users’ curiosity, engage their senses and enhance multimodal interactions, the more successful they should be in facilitating easy play (Goethe 2019b; Leclercq, Poncin, and Hammedi 2020; Zhai et al. 2020). Therefore, it can be deduced that:

**P4.** Sensory components of transformative gamification help facilitating easy play.

### 6. Hedonic component

Further investigations into hedonic components of gamification such as gameplay experience dimensions (levels, leaderboards, challenges, feedback, etc.) reveal that those dimensions contain factors similar to Chorney (2013) and Hunicke, LeBlanc, and Zubek (2004) and Hofacker et al. (2016) and Robson et al. (2015) and Zichermann and Cunningham (2011)’s mechanics category or game flow elements (Csikszentmihalyi, Abuhamdeh, and Nakamura 2014; Sweetser and Wyeth 2005). Furthermore, several gamification studies have suggested that game flow – which is part of the game design and gameplay experience – is directly related to hedonic motivation and creation of a hedonic experience (Liu, Santhanam, and Webster 2017; Suh et al. 2017; Wiethof, Tavanapour, and Bittner 2021). Marache-Francisco and Brangier (2013) referred to those dimensions as motivational dimensions because they are closely related to driving motivation in users to accept gamification offerings.

Moreover, Wiethof, Tavanapour, and Bittner (2021) suggested that the aforementioned dimensions of gamification are those that can create a hedonic experience and lead to hedonic motivation. They suggested that hedonic motivation is likely to be achieved when gamification services provide users with interesting challenges and high quality tasks (Wiethof, Tavanapour, and Bittner 2021).
In previous behaviour change studies, those factors are often referred to as the hedonic elements of gamification and are significantly related to enjoyment (Mulcahy, Russell-Bennett, and Iacobucci 2020). Therefore, for the purpose of this research, gameplay experience and design factors such as challenges, mechanics, levels, engagement and presence will be referred as the hedonic components of transformative gamification.

Service marketing emphasises that the main aim of hedonic services (such as gamification services) is to add enjoyment and entertainment to a system (Hamari and Koivisto 2015; Mulcahy, Russell-Bennett, and Iacobucci 2020; van der Heijden 2004). Gamification is hailed as an effective hedonic tool for productivity (Hamari and Koivisto 2015; Mulcahy 2015). Therefore, the hedonic component of gamification has to do with the application of gamification mechanics to a context in a way that brings enjoyment for users. In the context of gamification, enjoyment is often referred to as the emotional pleasure that users perceive as a result of playing and interacting with gamification services (Mulcahy, Russell-Bennett, and Iacobucci 2020). The most frequently adopted framework to explain enjoyment is the Csikszentmihalyi, Abuhamdeh, and Nakamura (2014)’s theory of flow.

Flow is a state of optimal experience characterised by enjoyment in the present and is defined as a state ensuing from a balance between action opportunities (challenges) and action capabilities (skills) (Csikszentmihalyi, Abuhamdeh, and Nakamura 2014). Flow is a subjective state and comes with consequences such as loss of awareness about oneself, distortion of temporal experience, focused concentration and a sense that the activity itself is placed above the rewards for that activity (Nakamura and Csikszentmihalyi 2009). Flow is often described as a state in which individuals feel highly motivated, happy and efficient (Engeser and Rheinberg 2008). The theory of flow has been well established and used in psychology (Csikszentmihalyi, Abuhamdeh, and Nakamura 2014), human–computer interaction (Skadberg and Kimmel 2004) and gameplay (Sweetser and Wyeth 2005) – which is the focus of this paper. Sweetser and Wyeth (2005) introduced eight elements for Game-Flow namely, concentration, challenge, skills, control, goals, feedback, immersion and social interaction, which mostly fit into the hedonic component. Therefore, we assume that in gamification services, flow state that can be created through the hedonic components. As such the well-being outcomes of the hedonic component are expected to be identical with the well-being outcomes of the state of flow.

Distraction is at the heart of the concept of flow since flow is directly associated with distortion of time, space and self-awareness (Mulcahy, Zainuddin, and Russell-Bennett 2020; Nakamura and Csikszentmihalyi 2009). In the case of gamification, it has been suggested that loss of self-awareness – which can be construed as a high level of distraction – is one of the outcomes of the flow experience (Whittaker, Mulcahy, and Russell-Bennett 2021). There is a positive link between loosing self-awareness and levels of users concern about what is happening in the real-world, their actions and how they are presented to others (Whittaker, Mulcahy, and Russell-Bennett 2021). It is also suggested that gamification services that are perceived as enjoyable are effective in distracting users from stress, negative emotions and negative life events (Mazurek, Engelhardt, and Clark 2015). Distraction is especially effective for gamification services which target addictive behaviours such as smoking, gambling and negative thought loops because such gamification services can divert individuals’ attention away from the urge to perform a harmful/undesired behaviour (Pospelova 2020). It has also been reported that once individuals are highly involved with gamification services (state of flow) their urge to keep playing will become stronger than performing other actions in real world (Wagner 2016). Therefore, although no previous research has directly examined the relationship between hedonic experiences and distraction in gamification context, based on the above-mentioned evidence, it can be deduced that flow-like experiences created by hedonic components can lead to distraction in gamification services. Therefore, we propose that:

P5. The hedonic component of transformative gamification help create distraction through providing users with a flow experience.

It should also be noted that putting oneself in the state of flow and seeking enjoyment from gamification services for escaping from negative emotions can become an addictive behaviour if used in excessive levels (Mazurek, Engelhardt, and Clark 2015). This concept is referred to as problematic gamification use (Tanouri, Kennedy, and Veer 2021) and is outside the scope of this study.

Previous studies in the field of marketing for behaviour change have shown direct relationships between hedonic elements of gamification (challenge, feedback and character), knowledge –which is a transformative value dimension – and perceived game enjoyment (Mulcahy, Russell-Bennett, and Iacobucci 2020; Russell-Bennett et al. 2016). Moreover, there is a plethora of research in education literature highlighting positive effects of using gamification mechanics and hedonic elements on learning and increasing knowledge (Aldrich 2005; Girvan and Savage 2019; McCoy,
Lewis, and Dalton 2016; Stott and Neustaedter 2013; Tulloch 2014; Veltos 2017). Similarly, Fieseler, Maltseva, and Hoffmann (2017) indicated that gamification services can help increase awareness and knowledge about pro-environmental behaviours through hedonic mechanisms. Furthermore, gamification is suggested as an effective tool in increasing brand awareness in commercial marketing and social marketing context (Mulcahy, Russell-Bennett, and Rundle-Thiele 2015; Tanouri, Mulcahy, and Russell-Bennett 2019; Xi and Hamari 2020). It is also believed that hedonic aspects of gamification can help create knowledge-enhancing and transformative gamified social marketing interventions and subsequently lead to increased behavioural intentions (Mulcahy et al. 2018). Furthermore, providing enjoyable gamification service experiences is also shown to be an effective way of changing individual’s choices toward healthy foods through increasing nutrition knowledge (Ögel Aydin and Argan 2021).

Moreover, according to the extended hedonic system acceptance model, joy and pleasure are often considered as main consequences of hedonic systems (van der Heijden 2004). However, obtaining knowledge, and increased motivation for exploring gamification offerings should also be taken into account as the other significant outcomes of using hedonic systems such as gamification services (Lowry et al. 2012). In addition, a closer look at the concept of game-based learning reveals that this concept capitalises on the hedonic aspects to enhance individuals’ learning experiences (Juharia and Bakar 2020). This is similar to how Qian and Clark (2016) associate knowledge enhancement and skill acquisition through gameful activities, with enjoyment and sense of achievement; which are related to the hedonic aspects of gamification. Therefore, it can be proposed that:

**P6.** The hedonic component of transformative gamification can help increase knowledge and awareness of users about promoted behaviours.

Furthermore, although it has been suggested that hedonic outcomes cannot directly lead to behavioural change (Chorney 2013), a few studies have reported positive associations between hedonic outcomes and behavioural intentions through word-of-mouth (WOM) (Mulcahy, Russell-Bennett, and Iacobucci 2020). A detailed investigation of the reasons why WOM about a behaviour is created reveals that it has a hedonic nature. According to social capital theory, individuals’ social interactions create their personal relationships; therefore, they tend to share cognitive resources – in the form of experiences and memories, to strengthen their social bond. This is believed to be the primary determinant of WOM (Wang et al. 2016). Users thus tend to share their enjoyable experiences with gamification services with their social network. As such, the more gamification services reinforce joy and excitement, the more likely they become an important part of users’ lives, affecting their self-representation and consequently their social interactions (Mulcahy, Russell-Bennett, and Iacobucci 2020; Yee and Bailenson 2007).

In the context of social marketing, Hsu and Chen (2021) suggested that hedonic aspects of gamification can positively drive WOM about pro-environmental behaviours. They reported a strong positive relationship between hedonic value of gamification and affective-based attitude as well as a strong relationship between affective-based attitude and WOM about recycling practices (Hsu and Chen 2021). Moreover, in the field of consumer behaviour, Saidon et al. (2016) suggested a positive direct link between hedonic value of gamification services and positive WOM about online shopping. Positive links between hedonic elements of gamification and WOM have also been reported in several previous studies in the field of commercial marketing (Hsu and Chen 2018; Merhabi, Petridis, and Khusainova 2021; Zhang et al. 2021). In the context of health and well-being, it is believed that individuals spread WOM for two main reasons: (1) altruistic reasons such as helping and warning others and (2) because they might still be uncertain about that certain behaviour (Martin 2017). In this situation, individuals spread WOM to convince others to perform that behaviour, too, because it will help them convince themselves about that selected behaviour (Martin 2017). Therefore, we expect that hedonic aspects of transformative gamification services help encouraging users to spread WOM for altruistic and self-assurance reasons. As such, the following proposition can be put forward.

**P7.** The hedonic component of transformative gamification helps increase intentions to perform well-being behaviours through driving word-of-mouth (WOM) about that behaviour.

Control regards the ability of users to influence events, storyline and the environment of gamification services by their actions and decisions (Klimmt, Hartmann, and Frey 2007). Control is important for behaviour change services and is considered one of the main determinants of behavioural intentions in multiple theories of behaviour change such theory includes the Theory of Planned Behaviour and the Model of Goal-directed Behaviour (Ajzen 1991; Perugini and Bagozzi 2001). Perceived control then, as a hedonic element of gamification, facilitates reflection and simulation (Ertz et al.
Providing simulation opportunities (simulation value) through hedonic components of gamification for behaviour change purposes is a common approach in social marketing (Dietrich et al. 2019; Howard et al. 2021; Vallentin-Holbech et al. 2020). For example, Dietrich et al. (2019) reported positive results using a gamified simulation-based intervention to encourage individuals make responsible decisions regarding alcohol use. They created a simulation VR experience in which users could see themselves in a house party and could make different choices in different scenarios and see the outcomes of their decisions (Dietrich et al. 2019). The results of this study showed that users enjoyed experimenting different possibilities and having control over their experiences (Dietrich et al. 2019). Furthermore, Howard et al. (2021) used a gamified simulation experience to understand park visitors’ decision making process with regards to conservation practices. They suggested that not only such simulation experiences could help understand users’ decision making processes but also gamified simulations can be used to encourage positive conservation practices (Howard et al. 2021). Further investigation of the aforementioned studies reveals that they used several hedonic elements such as challenge, control and feedback to create reflective and simulation experiences. As such, although previous gamification research as not yet empirically examined the relationship between simulation/reflection to behavioural intention through control, such relationship can be extrapolated based on the above evidence.

P8. Hedonic components of transformative gamification provide users with a reflective/simulation opportunity by giving users control over the gamified environment and external context. This subsequently leads to increased intentions to perform well-being behaviours.

Concerning the relationship between the different types of gameplays and hedonic component, evidence from previous research, an association between the hedonic component and hard play can be concluded. Hassenzahl (2001) describes hedonic dimensions as those which have no direct relation to task-related goals. As discussed earlier, hard play is characterised by high levels of engagement with gamification design elements and high motivation of users to involve with and master gamification challenges (Leclercq, Poncin, and Hammied 2020). Like the state of flow, at this level of engagement, overcoming challenges, and enjoyment from gamification becomes more important that the external rewards gamification services offer (Csikszentmihalyi, Abuhamdeh, and Nakamura 2014; Leclercq, Poncin, and Hammedi 2020). Subsequently, the gameful experience will become more important than what is being gamified (Sweetser and Wyeth 2005). This is also similar to challenge-based immersion which is a gameful experience and takes place when users successfully accomplish gamification challenges and strive for more challenges and are motivated to keep playing (Ermī and Māyrā 2005). Therefore, it can be deduced that:


Hedonic components seem to be a prerequisite for user engagement with the content of gamification (what is being gamified). While gamification services that have hedonic and sensory components can influence behaviours, these gameful experiences alone cannot guarantee sustained behavioural change unless containing a relatable meaning and a clear message (Nicholson 2012). We now move on to explaining the content component of transformative gamification.

7. Reflective component

Lastly, there are different viewpoints on the reflective component which contains the narrative and main messages of gamification services. Investigating the narrative elements of transformative gamification services is particularly pivotal because they are often the medium through which the meaning and the core (behaviour change) message is delivered to users. In previous social marketing for research gamification narratives are often used as a venue for disseminating behaviour change messages or educational content (Mulcahy, Russell-Bennett, and Iacobucci 2020; Russell-Bennett et al. 2016).

Moreover, gamification elements that create a reflective experience and make-up of the proposed reflective component have been introduced under different
components in previous research. For example, in game studies literature, Chorney (2013) suggested the narratives, stories and characters to be the elements of the game content category. Wang, Shen, and Ritterfeld (2009), however, suggested a separate category for narrativity dimension as indicated in Table 2. On the other hand, in gamification literature, similar to Wang, Shen, and Ritterfeld (2009)’s approach, Hofacker et al. (2016) suggested a separate component made up of those elements called the ‘story’ component. However, Werbach and Hunter (2012) and Zichermann and Cunningham (2011) suggested those elements to be the elements of gamification dynamics. Furthermore, Chou (2013) referred to those elements as the elements that contribute to the ‘epic meaning’ and ‘social influence’ dimensions of gamification services as indicated in Table 3. Moreover, in the context of transformative gamification, Tanouri, Kennedy, and Veer (2021) referred to those elements as the elements that can facilitate narrative transportation. This is also partly in line with what was meant by gamification content in previous social marketing studies because gamification narratives are often venues for disseminating behaviour change messages or educational content (Mulcahy, Russell-Bennett, and Iacobucci 2020; Russell-Bennett et al. 2016).

Changing the unit of analysis to experiences rather than design elements and incorporating social marketing and TSR perspectives to the analysis, it can be noted that all those elements have one thing in common when it comes to gamification for well-being. That is, contributing to creating a reflective experience. Therefore, we put forward another component called the reflective component, which is an aggregate of gamification narrative elements, emotional appeal and educational aspects.

The reflective component of transformative gamification is mainly concerned with the message, informational and educational content of gamification services. These are often delivered either indirectly via gamification narratives (Chorney 2013; Wang, Shen, and Ritterfeld 2009) or by directly exposing users to educational content. Exposing users to educational content and creating learning opportunities for them is well studied in previous gamification research and shown to be an effective way to increase behavioural intentions (Russell-Bennett et al. 2016). Previous research has also suggested a direct relationship between message (both the message itself and its framing) and behaviour change (Cheng, Woon, and Lynes 2011). However, there seems to be a dearth of research exploring how and which well-being outcomes can be derived from narrative elements of the reflective component. Therefore, investigating how reflective experiences can be created via narrative elements of gamification and which well-being outcomes they can give rise to seem especially important.

The effectiveness of gamification services in leading to social and behavioural change is dependent on the extent to which users are given meaningful and relatable content (Nicholson 2015; Tulloch 2014). This can be explained by narrative transportation theory (Green and Brock 2000). Narrative transportation is an extreme state of absorption and the feeling of being lost in a story (Nell 1988). It is ‘a distinct mental process, an integrative melding of attention, imagery and feelings’ (Green and Brock 2000, 701). According to van Laer et al. (2013), flow is different from narrative transportation in that the latter has to do with empathy, mental imagery and the experience of users with the story rather than aesthetic aspects. Therefore, when it comes to gamification, the difference between flow and narrative transportation is that the latter is the result of interacting with the narrative elements of gamification, while flow results from extreme engagement with the gameplay. According to narrative transportation theory, absorption of individuals in a story can influence their beliefs and behaviours (Green and Brock 2000). Strong stories blur the line between reality and the story-world (Phillips 2015). This departure from reality into a fantasy world can lead to distortion of time and space in users’ perspectives. It thus contributes to distraction value by reducing users’ urge to perform undesired behaviours (as in smoking cessation, etc.).

Empirical behavioural and gamification research has also underpinned the distinctive power of transportive stories. For instance, Bravender et al. (2010) reported lower tendency for transported individuals to consume unhealthy drinks compared to non-transported peers. Lu et al. (2012) suggested that when individuals are transported to gamified health narratives, most of their mental capacity will be dedicated to the narrative, therefore, they will have very limited mental resources to commit to what is happening outside it. That is, the urge to performing undesired behaviours. Furthermore, it is suggested that engaging with highly transportive digital stories (such as the ones in games and gamification services) can be used as means of escapism for users (Russell and McQuarrie 2013). Therefore, gamification services which include transportive stories can function as coping mechanism by helping users redirect their thoughts away from stressful situations and unhealthy behaviours (Russell and McQuarrie 2013). Therefore, it can be proposed that:

P10. The reflective component of transformative gamification services helps distract individuals from
performing undesired behaviours by immersing individuals into the gamification narratives.

It is believed that transportation of individuals in fantasy worlds (such as the ones in gamification services) can affect their emotional states, perception of themselves, and consequently, lead to behavioural change (Biocca 2002; van Laer et al. 2013). This is important in behaviour change research as according to self-perception theory, providing people with the opportunity to engage in even the imaginary act of behaviours will shape their attitudes toward those behaviours (McKenzie-Mohr 2011). Likewise, Dijkic and Oatley (2014) indicated that highly transportable stories can alter individuals’ perception of self and lead to changes in their personality and behaviours. As such, transportive gamification narratives with opportunities to engage in well-being related actions (e.g. diet or exercise) can lead to positive changes in self-perception and eventually attitude towards those behaviours.

This positive relationship between transportation into stories and behaviour change is supported in multiple social marketing contexts including pro-social behaviours (Johnson 2012), smoking cessation (Dunlop, Wakefield, and Kashima 2010), and vaccine and cancer-examination hesitancy (Jensen et al. 2017; Krakow et al. 2017). In the context of transformative gamification, Tanouri, Kennedy, and Veer (2021) suggested that transportation into gamification narratives leads to behavioural changes through increasing self-efficacy. They indicated that performing health-related behaviours in gamified environments increases individuals’ self-efficacy about those behaviours and consequently, the likelihood of performing those behaviours in real world (Tanouri, Kennedy, and Veer 2021).

Furthermore, Gebbers, De Wit, and Appel (2017) indicated narrative transportation as a predictor of self-efficacy and subsequently behavioural intentions. They studied individuals transported into the TV series Sex and the City and reported increased levels of self-efficacy willing to discuss topics regarding sexually transmitted decease with their partners. Isberner et al. (2019) further investigated the relationship between transportation and self-efficacy in social marketing and health-related contexts and suggested that transportation leads to behaviour specific self-efficacy and control in story receiver only when the story includes a main character with high level of behaviour-specific self-efficacy. Regarding climate action which is a growing context in social marketing research, Bieniek-Tobasco et al. (2020) reported that transportation of individuals into climate change documentaries is positively associated with their efficacy believes and subsequently their behavioural intention. Therefore, we expect to see a relationship between transportation, self-efficacy, and behavioural intentions in gamification context since apart from having the main features of other digital tools, gamification services enable users to practice the promoted behaviours in a gamified world. As such, it can be proposed that:

P11. Transportive gamification narratives help increase users’ behavioural intentions through influencing their self-efficacy.

Detailed investigation of the mechanisms by which gamification narratives influence users’ behaviours, reveals that aside from changing behaviour through influencing self-perception and self-efficacy (P11), the reflective component can facilitate behaviour change through empathetic reflection (Dillard, Ferrer, and Welch 2018; Krakow et al. 2017; Saleme et al. 2020). Empathy is described as the cognitive and/or emotional response of an individual to the observed experience of another (Davis 1983). Whilst empathetic reflection is referred to as ‘when the reflector acknowledges the emotion of others involved in the event along with the emotion of self’ (Marathe and Sen 2021, 1). In gamification context, this is considered as the ways by which gamification narratives, characters and events are used to develop empathy in users – often by exposing users to experiences and emotions of the gamification characters and encouraging users to feel how the characters feel (Kontiza, Liapis, and Jones 2020).

Previous studies suggest that developing empathy is the core aspect of the high levels of immersion and engagement with the content of games (Brown and Cairns 2004; Ermi and Mäyrä 2005; Qin, Patrick Rau, and Salvendy 2009). Game researchers have long been investigating this concept and used different terms to explain the high level of users’ engagement with content and narratives such as imaginative immersion (Ermi and Mäyrä 2005), total immersion (Brown and Cairns 2004) and narrative immersion (Qin, Patrick Rau, and Salvendy 2009). Closer examination of those types of immersion reveals they share one thing in common, they lead to behavioural outcomes through enhancing empathy. It has been suggested that developing empathy is one of the main indicators of achieving high levels of narrative immersion (Brown and Cairns 2004; Qin, Patrick Rau, and Salvendy 2009).

In the context of social marketing, Saleme et al. (2020) showed that using interactive stories informed by behavioural theories that focus on promoting empathy via gamification can lead to high levels of engagement and behavioural change. Moreover, a positive
relationship between developing empathy and voluntary behaviour change is suggested in previous studies (Phillips 2015; Saleme et al. 2020). Moreover, Rivera and Nogaró (2020) reported empathetic reflection as the main tool for digitalisation of empowerment for women at risk of exclusion in Latin American context. Furthermore, Gordon et al. (2018) introduced the concept of collective storytelling in social marketing and suggested that transportive energy-related stories influence users’ behaviours toward energy efficient practices. They indicated that developing empathy toward characters of stories is one of the main determinants of the effectiveness of such stories. It is also believed that in the field of social marketing, one of the main applications of stories is to influence behaviours through encouraging empathetic reflection and observational learning (Weinreich 2020). Therefore, based on previous empirical and theoretical evidence across different disciplines the same application is expected for transformative gamification services.

P12. The reflective component of transformative gamification (specifically the narrative elements) facilitates behaviour change through empathetic reflection. Furthermore, as indicated by Qin, Patrick Rau, and Salvendy (2009), transportation into gamified narratives can lead to behavioural intentions if it involves a process of observation, hypothesis formation and validation/falsification of those hypotheses. This process is similar to reflective opportunity and simulation value discussed in Section 4. Both serious play and interactive play are characterised by engagement of users with the core meaning/task/behaviour that gamification services offer (Leclercq, Poncin, and Hammedi 2020). It is a common practice in gamification design to introduce the meaning and the gamified task via narratives (Hofacker et al. 2016; Tanouri, Kennedy, and Veer 2021; Vallen-tin-Holbech et al. 2020). For example, in interactive play, users tend to apply what they have learned interacting with gamification services in their life and consider such services as sources of empowerment (Leclercq, Poncin, and Hammedi 2020). This is the same as the reflection process discussed earlier in this section.

Similarly, in serious play, users are highly engaged with the content and are motivated to become successful in the gamification context. For example, for a gamification service that focuses on improving mental well-being via teaching emotion regulation skills, users may engage in the gamified task (how to improve regulation skills) and develop connection with the narrative, characters, the scenarios, etc. while they are not particularly concerned with how to progress, collect more points and improve their status within gamification structure. Therefore, although no empirical studies have investigated such relationship, based on extrapolating on previous research, it is expected that:

P13. The reflective component of transformative gamification facilitates behaviour change by providing users with simulation value (replicating real-world scenarios and provide users with the opportunity to reflect on events in gamification narratives).

The above-mentioned combination of simulation and reflection can be particularly useful in behaviour change services targeting behaviours such as drink driving or drug taking. These require individuals to revisit their current habits and unhealthy behaviours before substituting them with healthy ones.

The reflective component – due to its focus on the gamified tasks as opposed to gamification mechanics – seems to be associated with the serious play and interactive play among different play types discussed in Section 4. Both serious play and interactive play are characterised by engagement of users with the core meaning/task/behaviour that gamification services offer (Leclercq, Poncin, and Hammedi 2020). It is a common practice in gamification design to introduce the meaning and the gamified task via narratives (Hofacker et al. 2016; Tanouri, Kennedy, and Veer 2021; Vallentin-Holbech et al. 2020). For example, in interactive play, users tend to apply what they have learned interacting with gamification services in their life and consider such services as sources of empowerment (Leclercq, Poncin, and Hammedi 2020). This is the same as the reflection process discussed earlier in this section.

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P14. The reflective component of transformative gamification services helps facilitating users’ engagement in the forms of interactive and serious play.
Figure 1 provides a summary of the propositions discussed in this paper.

8. Discussion: transformative gamification implementation

This section presents an implementation framework to inform behaviour change researchers about the effective implementation of transformative gamification services. In this manuscript, we show an overview of the main components associated with transformative gamification (reflective, hedonic and sensory components). Furthermore, having introduced propositions and determining desirable outcomes through social marketing and TSR lenses, we outline how the proposed framework can be applied to those disciplines. Moreover, we identify how each of the components suggested by the implementation framework is associated with different gameplay typologies.

To introduce a holistic implementation framework based on the propositions suggested in previous section, it is necessary to investigate the relationship between the components of transformative gamification services (sensory, hedonic and reflective). In the case of this research, we propose a hierarchical structure for transformative gamification services based on previous research as well as the findings of the current study. First, a closer investigation of the findings of this study shows a logical hierarchical order in the outcomes of different components shown in Figure 1, i.e. apart from the outcomes that are similar in all components (increasing the likelihood of performing desired behaviours and decreasing the likelihood of performing undesired behaviours), there are three different outcomes in a logical hierarchical order associated with the components. The sensory component is the component that contributes to service uptake (P1 and P3), the hedonic component contributes to behavioural intentions (P7), and the reflective component leads to behavioural change (P12). Therefore, a hierarchical structure seems appropriate, since the uptake of gamification services is a precondition for influencing intentions and enhancing behavioural intentions in a precondition for actual behaviour change.

Second, such hierarchical structure is also supported based on marketing and gamification literature. According to Garris, Ahlers, and Driskell (2002), individual’s decisions to engage with any kind of game are based on the appeal to sensations not readily experienced elsewhere. Such decisions are mainly made according to individuals’ evaluation of sensory elements (Garris, Ahlers, and Driskell 2002). For example, if a smoker was considering some options including using a mobile gamified service, ordering a paper-based education package, and ringing a help line, to help them quit smoking, they would consider the benefits of the gamified version beyond the educational aspects of the education package and human components of the help line. Moreover, Bedwell et al. (2012) indicated that the sensory component of gamification is one of the main determinants of users’ conception of being in the gamification’s world. Likewise, it is also believed that gaining users’ attention through evoking sensations is the main precursor of emotional investment and challenge acceptance in game environments (Brown and Cairns 2004; Ermi and Mäyrä 2005). Sensory and experiential cues can also facilitate hedonic responses in gamification settings (Helmefalk and Rosenlund 2020).

In addition, from a marketing perspective, attracting users’ attention through sensory stimuli is the first step in successful delivery of a message (Chitty et al. 2017). As such, it can be postulated that the sensory component is the first and most basic component and a precondition to achieve further outcomes including behavioural intentions and change. Furthermore, as discussed in Section 6, the sensory component of transformative gamification services contributes to enhancing users’ curiosity and motivating them to engage with the gamified service (P3). This leads to positive behavioural outcomes only if the gamified service has more to offer users and can satisfy their sense of exploration. Otherwise, it leads to them attempting to continue their exploration in other services (Lashkova, Antón, and Camarero 2020). Therefore, the mission of the sensory component is to create prolonged active engagement and motivate users to explore gamification services more fully through creating sensory pleasure and enjoyment for users.

Moreover, regarding the reasons why the reflective component should be applied on top of the hedonic and sensory components, as indicated by Nicholson (2015), providing a meaningful experience is not just about having meaningful content, but is also about providing users with the required tools to experience and interact with that meaningful content. A meaningful experience will be created when hedonic and sensory elements of gamification services (audio–visual aspects, controls, levels, feedback, etc.) enable users to communicate with meaningful content (story, characters, events, etc.) (Nicholson 2015). Thus content is critical beyond mere ‘bells and whistles’ to legitimately drive behaviour change. Besides, without the existence of hedonic and sensory components, the reflective component per se cannot be considered a gamification service as those components are what differentiates
digital storytelling or public health communication campaigns with gamification services. As such, it seems credible to conclude that in order to best achieve the outcomes of each component of transformative gamification services, they should be applied on top of each other. That is, hedonic component should be applied on top of the sensory component and content on top of hedonic.

Furthermore, there is a difference between the nature and source of enjoyment from sensory components compared with hedonic components. As indicated in the theory of flow, the difference is that the latter emanates from the act of playing and getting involved with the environment, and progression elements of gamified services (Csikszentmihalyi, Abuhamdeh, and Nakamura 2014; Sweetser and Wyeth 2005). While in the case of sensory component, the enjoyment emerges from interacting with design elements such as controls, technological and audio–visual aspects (Zhai et al. 2020). Therefore, it can be concluded that the enjoyment which is caused by the hedonic component is what is referred to as a ‘gameful consumption experience’, while the former refers to a ‘playful consumption experience’. Lucero et al. (2014) further shed light on the difference between playfulness and gamefulness indicating that playfulness is associated with paidia-type activities while gamefulness relates to ludus-type activities. That is, playfulness has to do with sense of enjoyment from performing certain activities while not seriously thinking about consequences and reaching a specific goal or benefit. On the other hand, gamefulness relates to when the same activities are being performed within gamification structures. This can refer to when individuals perform those activities to gain points, progress in gamified services, earn badges, etc. (Lucero et al. 2014). Thus, for gamification services that tap into the sensory component and use innovative technologies, playful consumption experience and subsequently gaining audience curiosity would be when users enjoy interacting with those technologies and audio–visual aspects without being concerned about gaining points or utilitarian benefits. Such as using VR to teach the effects of alcohol on motor control (Dietrich et al. 2021). However, for those services to be gameful and be able to influence behaviours, they need to include hedonic gamification elements such as levels, challenges, control, points and provide a gameful consumption experience. For instance, it could be when users get points in the latter example, or are motivated to overcome challenges and levels of the gamification service.

Furthermore, with regard to how gameful and playful experiences are linked to different play types introduced in Section 4, both playful and gameful consumption experiences are associated with engagement with the gamification design elements rather than the task being gamified; therefore, they seem to be associated with easy play and hard play (see Section 4). However, as explained earlier, playful consumption experiences are associated with complementing resources and discovery. E.g. how it feels like when interacting with different features of gamification services and how gamification mechanics work without being concerned about winning or losing. As such, playful consumption experience is expected to be associated with easy play. Gameful consumption experiences, however, have to do with users striving to gain points, overcoming gamification challenges, and basically winning. Therefore, gameful consumption experiences are likely to be associated with structuring resource engagement and subsequently hard play.

Also, we suggest that in order to further influence behaviours and upgrade users’ experiences from gameful to transformative, users should become engaged with the reflective component. A ‘transformative consumption experience’ is pleasing because it contributes to the users’ experiences, and provides them with a reflective opportunity to improve themselves and their lives (Landers et al. 2018; Leclercq, Poncin, and Hammad 2020; Tanouri, Kennedy, and Veer 2021). In social marketing literature, transformative experiences are referred to as those which enable and provide opportunities for individuals to reflect on experiences, and understandings of their own and others (Kennedy, Veer, and Kemper 2022). Similarly, in services marketing, transformative experiences are created by empowering users to self-reflect and giving them self-confidence in their ability to recognise and resolve problems (e.g. mental health) (Gopaldas et al. 2021). Providing users with transformative consumption experiences is markedly important as it is suggested that such consumption experiences lead to sustained changes in individuals’ attitudes, behaviours and values (Mezirow 1997; Mezirow and Taylor 2009; Soren 2009).

In the case of gamification, the above-mentioned reflective opportunities that lead to transformative consumption experiences are often created via gamification narratives. For example, gamification designers use relatable narratives to show users experiences of others like them and encourage them to reflect on those experiences and learn from their reflection. Therefore, reflecting on Batat (2022) research on transformative consumption experiences, we posit that they are likely to be associated with engagement of users with the gamified task, narratives, the greater meaning behind gamification elements, and serious and interactive play. To more explicitly uncover when transformative
consumption experiences can be associated with interactive play and when serious play, it is beneficial to dwell upon the ways reflection takes place in gamification services. In general, reflective opportunities can lead to behavioural changes in two ways.

First, when users reflect on their achievement with regards to gamified tasks and gain more self-efficacy and confidence to perform the promoted behaviours in their lives. For example ‘I have been very successful in accomplishing the gamification tasks and the stories represent the same experiences as to what I have experienced in my life, therefore, I can be successful performing those behaviours in my life’. This is associated with serious play since users’ accomplishments from engaging with gamification resources form the basis of their reflection.

The second form of reflection is when users engage in reflective observation (Quinton and Smallbone 2010) and reflect on what they have learned observing the relatable experiences of others (gamification characters). For example ‘I can relate to the story and am inspired by this character, so I can overcome challenges the same way they did and successfully perform this behaviour successfully just like they did’. This form is associated with interactive play because it seems to be associated with empowerment, connecting to the greater meaning behind the gamified tasks and complementing cognitive resources.

Lastly, using the play typology in conjunction with the above can help designing effective users’ journeys in transformative gamification services and increase the likelihood of bringing about positive behavioural outcomes. Due to the nature of transformative gamification services and their tendency to create well-being related changes in individuals’ lives, such gamification services normally tend to complement resource engagement (easy play and interactive play) and increase individuals’ engagement with the gamified tasks (interactive play and serious play). However, as suggested earlier in this section, investing in sensory components, and creating a playful experience to maintain users’ engagement is the first step in implementing transformative gamification services. Therefore, we argue that easy play should be at the beginning of the users’ journey in gamification services. In line with P2, easy play is also associated with distraction value as it is defined as a type of gameplay in which users are immersed in discovery of the gamification environment and its mechanisms (Leclercq, Poncin, and Hammedi 2020).

Once users are engaged in the form of easy play via sensory component, the hedonic component should be used to motivate them to engage in hard play. As

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**Figure 1.** Summary of the propositions.
discussed in Section 6, hedonic components are associated with immersion of users into the gameplay and a situation in which users mainly play due to the gameful and enjoyable experience rather than the behavioural aspects of it. Transformative gamification services should eventually lead users to interactive and serious play which are usually the desired type of gameplay experience in behaviour change research due to their high engagement with the gamified task. However, we argue that the nature of desired behavioural outcomes expected from transformative gamification services determines whether interactive play or serious play is preferred first.

For example, for transformative gamification services that target issues such as mental well-being which require a considerable amount of learning and empowerment at the beginning and then practising what has been learned, we suggest gamification service providers guide users from easy play to interactive play and subsequently to serious play. Lastly, although hard play can be a gameplay experience which can significantly contribute to the creation of distraction value, as indicated by Tanouri, Kennedy, and Veer (2021), such extreme involvement of users with gamification services might lead to problematic gamification use due to excessive immersion of users into gamification narratives and hindering critical thinking. Therefore, well-balanced transformative gamification services are those that capitalise on the sensory, hedonic and reflective components to lead users from easy play to interactive and serious play. Figure 2 along with Table 4 provide an implementation framework as well as a schematic that summarises the aforementioned propositions and demonstrates the relationship between the different components, the experiences they can provide and their associated play types.

Lastly, similar to any other framework inspired by social marketing and TSR disciplines, putting in place evaluation procedures and guidelines for conceptual frameworks is of great importance (Donovan and Henley 2010; French, Merritt, and Reynolds 2011). Previous studies have often focused on the behavioural outcomes of different design elements to evaluate gamification frameworks (Dietrich, Mulcahy, and Knox 2018; Krath and von Korfflesch 2021). However, for the current study, as indicated in Section 5, experiences were considered as the unit of analysis instead of design elements. Therefore, we suggest that behavioural outcomes of different consumption experiences to be considered as proper measures to evaluate the framework. This is also in line with TSR logic regarding inclusion of users’ input into evaluation (Cronin 2016). For example the behavioural outcomes of consumption experiences, created by applying sensory, hedonic, and reflective components, and perceived through players engagement in the forms of easy/hard/serious/interactive play.

9. Theoretical contributions

From a theoretical point of view, this research contributes to gamification and behaviour change research in several ways. First, by combining service perspectives
Table 4. Transformative gamification implementation framework.

<table>
<thead>
<tr>
<th>Component</th>
<th>Proposition</th>
<th>Impact(s)</th>
<th>Outcome(s)</th>
<th>P</th>
<th>Consumption experience</th>
<th>Users’ engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensory</td>
<td>Sensory components of transformative gamification services should be used to enhance service uptake by creating a playful experience for users and keep them temporarily engaged to set the grounds for introducing the behavioural message and other hedonic feature of gamification</td>
<td>engagement, curiosity</td>
<td>increased service uptake, increased likelihood of behaviour change</td>
<td>P1</td>
<td>Playful</td>
<td>Easy play</td>
</tr>
<tr>
<td></td>
<td>Sensory components of transformative gamification services should provide a novel experience to grab users’ attention and distract them from performing undesired behaviours.</td>
<td></td>
<td></td>
<td>P2</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Sensory components of transformative gamification services such as technological capacity and audio–visual aspect should be used to lure users into performing promoted behaviours. In this stage, the users might not be interested in the behaviour that is being promoted, but they will attempt to conduct those behaviours because they attracted by the multimodal dimensions or the gamification service and are curious to see how they work.</td>
<td></td>
<td></td>
<td>P3</td>
<td></td>
<td></td>
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<td></td>
<td>Sensory components of transformative gamification services should be able to engage users in easy play. Users that are engaged in the form of easy play are highly motivated to explore and find out about different gamification mechanics</td>
<td></td>
<td></td>
<td>P4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hedonic</td>
<td>Once users’ sense of curiosity if fulfilled, the hedonic components of transformative gamification services should be used to immerse users into the gameplay. By providing the users with a flow experience, they will start enjoying the gamification services beyond the external rewards or the novelty of the technology or audio–visual aspects. Flow experience influences users’ sense of time and space, therefore, at this stage, they will be highly immersed into the gameplay and are distracted from all behaviours outside the gameplay, including the undesired behaviours</td>
<td>distraction value, flow</td>
<td>decreased likelihood of performing undesired behaviours</td>
<td>P5</td>
<td>Gameful</td>
<td>Hard Play</td>
</tr>
<tr>
<td></td>
<td>Hedonic components of transformative gamification services should be used in a way that encourage users to practice the promoted behaviour and gain more information around them. The enjoyment created through hedonic components will encourage users to repeatedly perform the promoted behaviours. This will help users not only to gain more knowledge about those behaviours but also to see themselves performing those behaviours in real world situations</td>
<td></td>
<td></td>
<td>P6</td>
<td></td>
<td></td>
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<td></td>
<td>The hedonic components of transformative gamification services should include mechanisms that encourage social interactions and spark WOM about the promoted behaviours. This will increase behavioural intentions in users and their peers</td>
<td>knowledge, awareness, comfort</td>
<td>increased likelihood of behavioural change</td>
<td>P7</td>
<td></td>
<td></td>
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<td></td>
<td>The hedonic components of transformative gamification services should be implemented in a way that give users control and provide them with the opportunity to test different scenarios and see the outcomes of different behaviours. This will provide a reflective opportunity for users and will help internalise the promoted behaviours and eventually increase behavioural intentions</td>
<td>control, simulation value</td>
<td>behavioural intentions</td>
<td>P8</td>
<td></td>
<td></td>
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<td></td>
<td>The hedonic components of transformative gamification services should be implemented in a way that engage users in hard play. Users that are engaged in hard play are highly motivated to play more, and enjoy/overcome the challenges offered by gamification services.</td>
<td>behavioural intentions</td>
<td></td>
<td>P9</td>
<td></td>
<td></td>
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<tr>
<td>Reflective</td>
<td>Transformative gamification services should provide users with transportive stories. Such stories can immerse users into what is happening in the gamification narrative and distract them from performing habitual behaviours including undesired behaviours. The distraction that gamification narratives provide acts like a booster to the distraction that was already provided by the hedonic and sensory components.</td>
<td>transportation, distraction value</td>
<td>decreased likelihood of performing undesired behaviours</td>
<td>P10</td>
<td>Transformative</td>
<td>Serious/interactive play</td>
</tr>
<tr>
<td></td>
<td>Transformative gamification services should include stories that increase users’ self-efficacy to perform promoted behaviours. This can be done by including educational content, reflective and simulation opportunities in gamification services. For example, when users perform a behaviour as protagonists in a gamified environment which is relatable and similar to their real-world, they will gain more self-efficacy to perform that behaviour in real-world as well</td>
<td></td>
<td></td>
<td>P11</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Reflective component of transformative gamification services should be implemented in a way that encourages empathetic reflection. Users with higher level of empathy are more likely to perform the behaviours promoted by gamification services in real-world.</td>
<td>self-efficacy, emotional connection</td>
<td>behavioural intention</td>
<td>P12</td>
<td></td>
<td></td>
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<td></td>
<td>The reflective component of transformative gamification services should replicate real-world stories, and scenarios so that users can be engaged in a relatable and reflective process. This will help users seeing their lives from a different lens which eventually lead to them revisiting their current behaviours</td>
<td></td>
<td></td>
<td>P13</td>
<td></td>
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<td></td>
<td>The reflective component of transformative gamification services should engage users in serious/interactive play. Once the users are engaged in those forms of play, they are highly engaged in the gamified tasks, and this will increase the likelihood of engaging with the gamification’s key message/content and eventually influence behaviours</td>
<td>simulation value, reflection</td>
<td>behavioural change</td>
<td>P14</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The reflective component of transformative gamification services should engage users in serious/interactive play. Once the users are engaged in those forms of play, they are highly engaged in the gamified tasks, and this will increase the likelihood of engaging with the gamification’s key message/content and eventually influence behaviours</td>
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<td>P15</td>
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</tbody>
</table>

Impact: user engagement in the form of interactive and/or serious play
and design perspectives, this research provides a set of propositions for implementation of transformative gamification services for behaviour change purposes. Second, reflecting on gamification best practice and the underlying theoretical foundations of transformative gamification, this research suggests a specific implementation structure (see Figure 2). Third, the implementation framework along with the implementation structure proposed in this research explain the links between user engagement types (gameplay types), gamification components and different forms of consumption experiences.

Fourth, this research extends understanding about how transformative values introduced by Mulcahy, Zainuddin, and Russell-Bennett (2020) can be achieved through different mechanisms of gamification such as flow, immersion and narrative transportation as they fit within distinct components of transformative gamification. Fifth, unlike previous research that mostly focused on individual components of gamification and the outcomes they can bring (Dietrich, Mulcahy, and Knox 2018), this research focuses on behavioural outcomes and explains how different combinations of those components (sensory, hedonic, reflective) can be used to bring about positive behavioural changes. Sixth, previous research in game studies has attempted to suggest components made up of individual game attributes and studied the role of those components from an entertainment point of view (Chorney 2013; Robson et al. 2015; Wang, Shen, and Ritterfeld 2009). However, when it comes to gamification, there is still lack of understanding about the experiences that the components—which are borrowed from game studies—can create for users and the transformative outcomes they can give rise to. This research bridges this gap by introducing a set of propositions focusing on transformative gamification’s main components from the user experience perspective and their role in bringing about behavioural outcomes. Lastly, this research strives to draw boundaries around transformative gamification services and spark discussions about users’ journey in such services.

10. Practical contributions

This research provides clarity on the application of different components of transformative gamification to produce behavioural outcomes. This research specifically provides practical benefits for behaviour change practitioners, service marketers and gamification designers. We suggest a multi-layer structure for the components of transformative gamification (see Figure 2). Therefore, we argue that focusing on just one component is unlikely to bring about behavioural change. Closer investigation of successful gamification services such as Reduce Your Juice (Yam et al. 2017), GOKA (Rundle-Thiele et al. 2015) and Blurred minds (Vallentin-Holbech et al. 2020) shows that those services were highly ranked by participants for all the three components. Whilst for these examples, the components were not intentionally incorporated, it is hoped that making effective transformative gamification services will be demystified using the proposed framework.

Furthermore, the findings of this research provide insight for behaviour change practitioners and gamification designers regarding the application of concepts such as flow and narrative transportation in gamification. As mentioned earlier, transportation of users into the narrative and content of gamification services will not happen unless a level of flow is achieved. It implies that, unlike self-paced media (such as self-help books), in which transportation into the content depends on the quality of the content and characteristics of users, in interactive media (such as gamification services), the structure of gamification services and the tools that they provide for users to interact with the content are the main determinants of transportation. Therefore, as indicated by Dunfield (2018) when individuals are provided with tools to interact with gamified narratives, they will be active agents in those narratives and can think, listen, speak and act based on the events of those narratives which can subsequently lead to empathy and reflection. Increased empathy and reflection, as discussed in Section 8, are believed to be the antecedents of behavioural change (Beck 2011; Corby 2007; Kauer 2012). This is especially helpful for planning transformative services for complex behaviour change problems such as binge drinking, drug taking, parenting or racism.

As such, although some researchers criticise the excessive focus of gamification on hedonic elements and rewards systems (Bogost 2015; Chorney 2013), behaviour change practitioners should eschew falling into the trap of downgrading the hedonic and sensory elements of gamification services; instead they should capitalise on them to create meaningful and engaging experiences; and user journeys that lead to transformative change.

Moreover, another recommendation for behaviour change practitioners and service marketers is to use co-design approaches to develop the content of transformative gamification services. There is a plethora of research indicating that not only are co-designed gamification services more effective than expert-designed ones in bringing about behavioural change, but also they are more preferable for young consumers.
and for sensitive health-related topics (Dietrich, Rundle-Thiele, and Schuster 2016; Durl, Trischler, and Dietrich 2017). Therefore, it is essential to consider that designing transformative gamification services is not only about how well gamification’s elements are put together but also it is about how and by whom the core idea is generated. This method is also in line with the tenets of TSR about creating collaborative opportunities for co-creating value with the end users (Cronin 2016).

Furthermore, another implication for service marketers is with regards to designing users’ journey. The findings of this study showed how users’ journey can be designed in parallel with the components of transformative gamification to lead users from a playful and fun experience to a transformative and change inducing experience. This is particularly important for designing transformative services focusing on sensitive social topics such as mental health and drinking because such a journey design helps users develop trust and feel safe during service encounters and prepare for cognitively heavy tasks such as reflection.

The last implication of this research for behaviour change practitioners and service marketers is with regard to the behavioural outcomes. Further exploration of the outcomes of each component reveals that they can be categorized in two groups. For the purpose of this research, we call them the essential outcomes and components’ mission outcomes. The essential outcomes include contribution to behaviour change and making users avoid undesired behaviours (increasing the likelihood of behaviour change and decreasing the likelihood of performing undesired behaviours). These outcomes are not specific to a certain component and each component should have mechanisms to help achieve them. On the other hand, the component mission outcomes are those that should be achieved by each component in order for the behaviour change process to progress to the next stage. For example, unless enough service uptake is achieved through sensory component, achieving significant meaningful behavioural intentions via the hedonic component is unlikely. Similarly, without a significant increase in behavioural intentions, achieving real behaviour change does not seem possible. As such, those outcomes can be used by service marketers and behaviour change practitioners as checklists to monitor and assess the successful implementation of each component.

11. Limitations

Although this research proposes a practical framework for implementing transformative gamification services, this research comes with some limitations and subsequently, some areas for further research. First, although the framework presented here anticipates the outcomes of each component of transformative gamification services, it does not investigate the casual relationships between those outcomes. Therefore, further investigation of causal links and relationships between the outcomes and antecedents can be an avenue for future research.

In addition, the current research provides only a theoretical approach to propose guidelines for implementation of transformative gamification services. Therefore, empirical research to support/reject the current research’s propositions is imperative to further the understanding of the concept of transformative gamification services.

Lastly, this research mainly focuses on creating positive behavioural changes and avoiding unhealthy behaviours through using transformative gamification services. However, in line with the TSR paradigm (Rosenbaum 2015), and as indicated by Tanouri, Kennedy, and Veer (2021), identifying and minimising of the potential negative and harmful effects of gamification services should also be a focus in future research and practice.

12. Venues for future research

Apart from the future research opportunities that stem from the limitations of this research, there are also a number of other areas that can provide significant insights into understanding of and further development of transformative gamification services as a social marketing and TSR concept. One of these areas is in relation to negative consequences of gamifications. TSR literature puts a great emphasis on identifying and avoiding unintended negative consequences of service encounters (Alkire et al. 2019; Anderson and Ostrom 2015; Rosenbaum et al. 2011). Therefore, it is essential to identify the possible negative outcomes of transformative gamification services. For example, regarding the sensory component, Zhai et al. (2020) although novel sensory experiences that can be created via technologies such as VR and AR can be used to engage the users in positive behaviours, in extreme cases they can lead to issues such as VR addiction. Moreover, it has been suggested that deliberately using gamification services for distraction from the real world too often, can lead to negative well-being outcomes, such as avoiding physical activity and self-isolation (Freeman 2008; Rapp et al. 2019). Therefore, further research on the concept of problematic gamification use is required to uncover how it can affect users and how such negative outcomes can be mitigated.
Furthermore, another venue for future research is with regards to ethical complications when using transformative gamification services. In transformative gamification services, ethical challenges may rise from two different sources. First, due to the emphasis of transformative gamification services on stories and subsequently narrative transportation, unsurprisingly, the ethical challenges of narrative persuasion will be relevant to transformative gamification as well. Van Laer, Feiereisen, and Visconti (2016) investigated ethical issues with regards to narrative persuasion and suggested three different factors including story domain, number of storytellers and number of story-receivers to be taken into account to avoid unintentional ethical challenges when using stories for persuasion. Therefore, similar research to investigate the ethical challenges of using storytelling in gamification can be an area for future research.

In addition, the necessity of further investigations in relation to the ethicality of using gamification as a persuasive technology, as well as collecting and using users’ sensitive data has highlighted in previous studies (Versteeg 2013). Therefore, since transformative gamification services are often targeted toward vulnerable groups and focus on sensitive well-being related topics, it is essential to explore the ethical implications of the different mechanisms and component of transformative gamification. As such, one area for future research can be to develop ethical design and implementation frameworks to guide researcher and practitioners in design and implementation of ethically informed gamification services. Doing so, future research can focus on adapting ethical design frameworks such as ‘Value Sensitive Design (VSD)’ (Friedman et al. 2013) to guide the designers of transformative gamification services. VSD is an approach to designing technologies that account for human values throughout the design process. VSD applies an iterative methodology to conduct conceptual, empirical, and technical investigations to ensure the ethicality of the technology design process (Friedman et al. 2013). This approach can specifically be aligned to transformative gamification since similar to transformative gamification it emphasises on human values and further the focus of the design, to the actors and consequences of technology on individuals. Therefore, further research on the intersection of such ethical design approaches and transformative gamification could be a venue for future research.

Another avenue for future research would be to investigate how different modes of delivery and different media can contribute to behavioural outcomes and users’ journey in transformative gamification services. This can be of great importance since there is evidence in the literature that suggests the superiority of crossmedia and transmedia approaches over the conventional uni-media ones (Jenkins 2006). Lastly, due to the conceptual nature of this paper and its theory-in-formation method of conceptualisation (see Section 3) (Laczniak and Shultz 2020; Yadav 2010), the propositions introduced in this paper are not empirically tested with data. Therefore, one area of future research can be to empirically test the propositions and the framework presented in this paper.

13. Conclusion

Transformative gamification is a relatively emergent area of research with the nascent literature; as such further conceptualisation and descriptive research is still required further development this area of research (Lefebvre 2012; Mulcahy, Zainuddin, and Russell-Bennett 2020). Drawing upon Mulcahy et al. (2018) research on gamification behaviour change purposes, the concept of transformative gamification was first introduced by Tanouri, Mulcahy, and Russell-Bennett (2019), and further developed and conceptualised by Tanouri, Kennedy, and Veer (2021) with a focus on TSR and social marketing. However, although they defined and conceptualised transformative gamification, their research did not elucidate how positive behavioural outcomes can be achieved via transformative gamification. That is, their focus mainly seems to be on the process of change while the current research investigates the ways different components and elements should be orchestrated to implement that change inducing process effectively. For example, Tanouri, Kennedy, and Veer (2021) highlighted the importance of a reflective experience in bringing about behavioural change. However, how they did not discuss how such experience can be created and through which component of transformative gamification. This was discussed at length in this paper through P8, P11, P12 and P13. As such, this research bridges this gap by breaking down transformative gamification to its main components and exploring the specific behavioural outcomes that can be achieved through the experiences each component can give rise to. Doing so, we have provided a practical framework for implementation of transformative gamification services and designing users’ journeys in such gamified services.

On a larger scale, our work extends the understanding of gamification in the fields of social marketing and TSR by shifting the focus of transformative gamification from design elements to consumption experiences different combination of those elements can create as well as integrating user’s journey and engagement
types in the proposed framework. Creating playful experiences and then building upon and upgrade it to gameful and transformative to change individuals’ behaviours is in line with the behaviour change theories that are often used in social marketing and TSR. It also better represents the incremental and longitudinal process of behaviour change as suggested by many social marketing theories (Brennan et al. 2014; Davis et al. 2015). At the end of the day, behaviour change is a journey rather than an incident, therefore, it makes more sense to identify and investigate experiences that form this journey rather than incidents (effects of single gamification elements) that might influence it.

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