E-Health Marketing Gamification and Limitations Vested on its Strategic Power with Specific Reference to Marketing

Jayadatta S

Assistant Professor
KLES IMSR, BVB Campus, Vidyanagar, Hubli

Gangadhar Sheeri

Assistant Professor
KLES IMSR
BVB Campus, Vidyanagar, Hubli -580031

Nitin Bhasker

Assistant Professor
KLES IMSR
BVB Campus, Vidyanagar, Hubli -580031

Abstract: *Technology has been widely used in recent years to motivate, engage, and support individuals in a variety of individually and socially beneficial behaviours.Globalisation has raised the stakes for businesses, making it more difficult for marketers to acquire new consumers and keep existing ones interested in their products and services.The notion of digital marketing as a vehicle for innovation and creativity is highly popular among marketers.One of the most prominent trends in this sector is gamification.Gamification's major objective is to entice customers to participate in non-game activities.This phrase, as well as its use in the sphere of service marketing is gaining popularity.Despite the growing interest, there is a significant vacuum in the literature about successful implementation and sustainability in service marketing.The goal of this systematic review was to look at the trends and gaps in the literature related to the adoption and long-term viability of gamification in service marketing.Gamification is a relatively recent concept that focuses on using game principles in non-game situations to engage audiences and inject a little fun into dull chores while also providing motivational and cognitive advantages.While many areas, such as business, marketing, and e-learning, have taken use of gamification's potential, the digital healthcare sphere has begun to do so as well.It claims that gamifications rationalist assumptions have serious limits when it comes to studying digital marketing in context because it interacts with the critical narratives of the online customer in complicated ways.These crucial customer narratives deal with crowdsourcing, new online customer habits and addictions, cognitive/affective behaviourism, emotional branding, and deconstructive consumer trust issues related to ethics, legislation, and data security.*

Keywords: *Gamification, sustainability, customer engagement, cognitive/affective behaviourism*

Introduction

With the rapid advancement of technology, marketers have shifted away from traditional marketing techniques and adopted new strategies that are unorthodox in global commerce.Researchers have identified gamification as one such technique (Dexter and Yazdanifard, 2015).Gamification is the use of game concepts non-game situations (Nah et al., 2014).However, there are a number of difficulties with this technology-based approach, including its immaturity (Agnieszka, 2014), definition debate (Hamari, 2015), inadequate design (Wen et al., 2014), successful implementation, and long-term sustainability (Kim, 2015; Pratap et al., 2016).The study found that gamification may have beneficial impacts on businesses, but that these results are dependent on how it is implemented and how engaged users are (Hamari, Koivisto and Sarsa, 2014).Gamification has also piqued the interest of academics, practitioners, and business professionals in fields such as education, information studies, human-computer interaction, and health.Gamification's implementation and long-term viability are two of the least researched subjects in service marketing.The lack of empirical evidence linked to gamification adoption and sustainability has been highlighted in previous publications.Furthermore, gamification is plagued by weak theoretical underpinnings and a lack of consistent implementation rules (Hamari and Koivisto, 2015; Russell-Bennett and Baron, 2015).According to the research, the most difficult aspects of Gamification include the difficulties in successfully implementing gamification and creating gamification mechanics to attract new consumers and motivate existing customers to participate in suitable outcomes on a regular basis (Butler, 2014; Russell-Bennett and Baron, 2015).According to the research firm, eighty percent of gamified applications fail to deploy due to bad design (Hill, Goel and Yang, 2015).The selection of the finest ideas and designs is a significant role in open innovation processes, according to (Lauto and Valentin, 2016).The issue of player attractiveness and long-term involvement that leads to loyalty is one barrier that gamified experiences have faced (Freudmann and Bakamitsos, 2014).Previous research has identified the platform for gamification deployment, but it is still unclear which platform is ideal for attracting consumers and ensuring long-term viability.The goal of this systematic research is to determine the trend and provide guidance on how to close the gap in service marketing.In different domains such as human computer, health, and education (Koivisto and Hamari, 2014; Dexter and Yazdanifard, 2015), review of literature has produced trends, benefits, and designing, but no systematic research has been directed on successful implementation and sustainability with the most appropriate platform in service marketing (Koivisto and Hamari, 2014; Dexter and Yazdanifard, 2015).The goal of this study is to start a research-based conversation on gamification in service marketing.Over the last few years, the notion of "gamification" has grown in popularity.Gamification was conceived in the digital media business, but it wasn't widely embraced until the second half of 2010.In order to raise brand recognition and promote consumer interaction, Zichermann created a marketing guide based on gaming mechanics.Furthermore, the concept of "gamification" has been a source of contention. "Gamification is the application of game design concepts in non-gaming situations."This implies that, rather than developing immersive, full-fledged games like "serious games," gamification aims to influence users' behaviour and motivation through game-like experiences.Nonetheless, serious games, fun engagement, and game-based technology are all connected to the aforementioned description.Serious games are games that are created for non-recreational reasons, with an emphasis on "serious" topics including economics, education, health, industry, military, and politics.Serious games, unlike gamification, originated before the widespread use of computer technology. Some of the studies were based on up to five million students, and the overall meta-analysis covered a total of 245 million students.These studies show that a student's personal traits, notably their intellectual capability and drive, are among the most important factors

influencing academic achievement.One of the most urgent issues threatening the long-term viability of educational systems today is a loss of student motivation.

Habit and Addiction of the Online Customer

We propose to show how digital marketing as a rational, utilitarian, and predictable online strategy dialectizes into new narratives of difference and crisis, namely, a new culture of non-optimality, a site of undecidability when the signs are confusing, approximative, and unknowable in the following section of this paper.We'll show that at this level, the marketing ethical line that separates the process of getting consumers hooked from the process of hooking customers is gone.Consent may be manipulated psychologically (Edward Bernays, 1947, The engineering of consent).Through social media and cellphones, the digital media is now heavily affecting behaviours and opinions.As a result, a large amount of customer data on nearly every element of consumer behaviour is now available (e.g. preferences, quantification of preferences, contact lists, etc).The number of ways to reach customers grows (e.g., at home, at work, in the vehicle, and everywhere else).Teenagers in the United States, for example, spend nine hours a day using media devices for entertainment in this zone of in-betweeness (Common Sense Media reports).Adults spend an average of two hours each day on social media throughout the world, up from 15 minutes per day in 2012 (Social Media Week reports).As a result, a new digital ecosystem has formed that requires immediate treatment for its addiction to social media and technology in both adults and children, as well as proper rehabilitation (for example, programmes such as Paradigm Malibu in California and reSTART Life in Washington State).Humans are not primarily rational, profit-maximizing beings; rather, they are primarily social animals whose brains are rewarded by gestures of connection such as smiles, praises, hugs, and embraces, which have now been supplanted in social media exchanges (e.g. likes, comments, retweets, etc).These new kinds of contact and social feedback amplify the effects of high dopamine, which elicit excitement and encourage users to re-hook on each other 24 hours a day, seven days a week (Ashlee Humphreys, Social Media: Enduring Principles).Internet users are now pursuing online social capital as "networked persons" (e.g. postings for emotional endorsements on Facebook when misfortune strikes).Our marketing organizations' job is to persuade customers not to cross the ethical line into addiction, and to return to that line once they cross it from digital habits to addiction.Social media, iPhones, tablets, and smartphones are undeniably a boon to today's mankind; they are examples of technology that has a beneficial impact.Nonetheless, Aristotle reminds us in The Nicomachean Ethics that "virtue, like vice, resides in our control."Browsers who do not participate in social media have also expressed displeasure with these services.They lack "self-control" and have great urges to engage in social media activities because participation does not "cost much."Sleep deprivation, academic difficulties and failure, health problems, social isolation, reduced work performance, marriage disputes, divorce, and other impairments can all be caused by technology addictions in teenagers and adults.

Other addictions may cause impulsive behaviour in the brain system, leaving the prefrontal cortex susceptible and unable to regulate inhibition.Much research show that digital addiction may turn into a social drug.For us, the problem is figuring out how to properly handle and control this "dark side" of potentially detrimental customer behaviour.People driving vehicles while using digital gadgets is quite prevalent nowadays, and as a consequence, around eight people die and 1,161 are wounded every day as a result of screen distractions (U.S. Centers for Disease Control and Prevention reports).Phone snubbing in personal or marital relationships, at work, and in employee-employer relationships is increasingly having negative consequences such as divorce, suspicion of adultery, loss of respect, dissatisfaction, and following periods of stress, anxiety, and

despair.Consumers visit multiple pages, are interrupted by digital advertisers, and brands such as Microsoft, Twitter, Apple, Facebook, and Google churn out products that are thankfully very enjoyable. Various other brands release videos games, simulations, notifications, posts, contests, images, commentaries, and messages that are optimized by data personalization and are geared to absorb and transfix customers into adopting "habits" that may become "addiction."Addiction is a habitual, persistent, reliant, and ongoing behaviour that has negative consequences.The topic of knowing the actual amount of people addicted to technology (0.7 percent, 11 percent, etc. of the US population) is being debated in many places, but accuracy would be detrimental.The proper question is to learn how companies are increasing social media usage rates and what type of marketing best practises may transform an Aristotelian vice into a force for good.

Review of Literature

Gamification is strongly connected to motivation; it alters people's behaviour by instilling motivation in them (Wen et al., 2014; Hamari and Koivisto, 2015; Xu et al., 2016).As a result, many theories, such as behaviourism, congnativism, self-determination, reasoned action theory, social proof theory, flow theory, and positive psychology, are centred on motivation.Watson proposed the behaviourism hypothesis in 1913.When a connection between task and reward is discovered, this hypothesis explains how rewards impact individuals.As a result, in order to obtain the rewards, kids will begin to engage in the activity, resulting in a shift in behaviour.Gamification's behaviourism can influence users' behaviour by motivating and rewarding them (Surugiu, 2014).However, because this approach focuses solely on the technique of obtaining rewards, participants may be unaware of alternative reasons for their engagement (Ne Gagné and Deci, 2005; Dexter and Yazdanifard, 2015).Furthermore, behaviourism ignores what is going on in a person's head.The inner motive is also neglected in this approach.Gamification, on the other hand, requires both inner and external motives.Only extrinsic incentives are insufficient for motivation, according to (R. M. Ryan and Deci, 2000).Extrinsic incentive reduces motivation to use a company's products and services after the reward is removed.

Deci and Ryan's 1985 self-determination theory is a macro explanation of human motivation that focuses on people's natural development tendencies and psychological requirements.As a result, this is the most widely accepted motivational theory, which is separated into two categories: intrinsic and extrinsic motivation (Deci et al., 2001; Baard, Deci and Ryan, 2004).Three psychological requirements linked to intrinsic motivation are autonomy, competence, and relatedness.On the other side, extrinsic motivation is a source of worry for reward.Intrinsic motivation, according to (Deci et al., 2001), provides an individual with autonomy by allowing them to select based on feedback rather than being controlled by the instructions provided to them.He went on to say that reducing autonomy might reduce innovation, performance, and the desirability of the provided sustainable activity in the long run (Gagne & Deci 2005).However, psychology distinguishes between intrinsic and extrinsic motivation when it comes to gamification (Wen et al., 2014; Berger and Schrader, 2016).Gamification success requires a balance of extrinsic and intrinsic incentives.Extrinsic motivation is connected to game features like points and badges in gamification.Intrinsic motivation is linked to enjoyment, recognition, social acceptability, and self-actualization (R. Ryan and Deci, 2000; Ne Gagné and Deci, 2005; Niemiec et al., 2006).

Seligman and Csikszentmihalyi coined the term "positive psychology" to describe a field of psychology. The PERMA and FLOW theories are two subsets of this theory. Seligman investigates what makes individuals happy. This notion is based on five basic characteristics that are critical to an individual's success. Positive Emotions, Engagement, Relationship, Meaning, and Achievement (PERMA) are acronyms for Positive Emotions, Engagement, Relationship,

Meaning, and Achievement. Csikszentmihalyi proposed the second idea, FLOW, in 1975. Flow occurs when the activity is neither too difficult nor too simple. When goals are clear and there is a balance between perceived challenge, skill, and immediate outcome, flow will emerge.The importance of flow in the gamified design process cannot be overstated.It will begin to represent the cognitive side of Gamification and will concentrate on how individuals feel about their work (Seligman and Csikszentmihalyi, 2000).

Emotionizing the Brand

The emotionization of brands is a modern trend of building businesses that appeal directly to customers' egoism, condition, state, needs, and wants.By evoking a consumer's emotion, a link is formed between the product and the consumer.Customers have wants and desires, such as power, love, and security that are based on emotion on a subconscious level.Requirements and desires serve as a foundation for emotionalizing companies and allowing digital marketers to create a self-fulfilling prophecy based on customer needs.Given that consumers have wishes and requirements to satisfy, and digital marketers are continually emphasizing the importance of fulfilling them, it is apparent that gamification cannot serve as a comprehensive guide to the whole digital marketing process.The difference (to use Jacques Derrida's phrase) narratives of ambiguity coming from decision-making models in the paradigms of rational choices, which are, for the most part, sequential and cognitive in character, is therefore a key problem in digital marketing tactics.Because it also deals with disconnected objects and processes including products, services, a client's source of sadness, music, people's pictures, and complicated connection attitudes, the developing process of emotionizing brands is not a rational one.

A product can be unambiguously related to a person, brand, or idea, such as Bliss being a Coca-Cola brewery or Safety being a Renault-Nissan family garden.In the field of viral publishing, digital techniques are frequently used with the goal of eliciting an emotional response to an e-advertisement, product, or piece of information.Brands can build an enduring bond in the hearts and minds of customers with only the exposure impact.However, in order to create a relationship between customers and a brand, the brand must portray a highly distinct personality, complete with exact symbols and values.Storytelling also employs archetypal emotionization, which elicits universal feelings across all geographies.Nike's hero archetype, for example, is known for its unwavering commitment to client devotion all around the world.The hero, like everyone else in the world, comes from a modest beginning, faces a terrifying foe, and, against all chances, survives until the end of the storey.By turning the tale inward, Nike uses the morale strength of this emotive storey of the universal hero to sentimentally charge its marketing approach.Nike's marketing strategy is to tell the customer that he or she is a hero (active, enterprising, smart, etc.) and that the enemy is his or her lazy interior self, whom everyone around the world identifies with, rather than the exterior enemy, with which not everyone identifies.As a result, a food brand may be connected with desert inhabitants' endurance, strength, and resistance as a manner of implying that the food brand can be put to the test against the natural components of a life cycle.The paradigm created here is that of a lone fighter confronting the chances of life, but with the help of invigorating, protecting, and safe dietary ingredients.Although this marketing technique may be deemed manipulative of human emotion by "saming" goods and archetypes, it is an attempt to distinguish the emergence of brands from the "spamming" of advertisements that are cranked out on a daily basis.In addition to cognitive and affective techniques, marketers might use nuanced emotionizing appeals for customers with high degrees of emotional intelligence, so that a simple connection does not sway or delay suspicious customers' decision-making.

Analysis & Discussion

The below section discusses the results obtained and provides implications for practice and directions for further research in the area of gamification in e-Health. To address the digital marketing gamification and limitations vested on its strategic power with specific reference to service marketing with specific reference to e-health some research questions are addressed.

RQ1: Which publication channels are the main targets for gamification in e-Health?

As it was explored in many publishing channels, including conferences and journals, a significant deal of knowledge on gamification in e-Health was obtained.Nonetheless, the bulk of the studies included in this systematic literature review appeared in journals and conferences devoted to medical and health research, as well as those concerned with computer interfaces.The apparent disparity in the quantity of journals vs conferences as publication venues can be explained by the fact that journal publishing is typically more difficult than conference publishing; this discrepancy was made obvious during the quality evaluation phase.

RQ2: How is the research focused on gamification in e- Health distributed over years and across countries?

Although we intended to include research published throughout the previous fifteen years, we were only able to get those from the recent five years (2010–2015).The notion of gamification gained off in a big way in the second half of 2010, especially in the fields of industry and education.The rise in interest in gamification in e-Health, on the other hand, just began at the beginning of 2014.In comparison, the current wave of serious games began to acquire traction in the thoughts of many academics in the year 2002, despite the fact that many serious games existed before to this date.Nonetheless, the reader may notice a little drop in 2015, which is understandable given the time span covered by this systematic literature review.As a result, the number of research that was published in 2015 may be skewed to some extent.The geographical dispersion of research on gamification and serious games in e-Health came as no surprise.Authors from the United States of America, Portugal, Canada, the Netherlands, England, and Finland have written the majority of the articles published in this field.Other European nations, such as Ireland, Italy, Spain, Greece, Sweden, and Austria, as well as Latin American countries, such as Colombia and Brazil, have made fewer contributions.Despite the fact that many papers were eliminated in order to fulfil the inclusion criteria for this literature review, contributions from Asian and African nations were rare.The growth of e-Health in nations all around the world might explain this spatial disparity.As a result, the most developed countries were undoubtedly the first to address this issue and contribute meaningfully to its enrichment.

RQ3: How easy is it to find recognized papers?

Despite the fact that conferences and symposia outnumbered journals in this survey, the vast majority of the journals found were well-known.Three of the five journals rated as JCR are focused on Medicine and Health Informatics.Cyber-psychology and ubiquitous computing are two of the three additional JCR journals' focus areas.Only two conferences are listed in the CORE 2014 ranking, and their topics include collaborative methods in healthcare systems, gamification, and interface design for games, among others.Gamification and serious games in the e-Health field are regarded maturing fields, based on the percentage of acknowledged publications (30%).The papers included were neither perfect nor inappropriate in terms of quality and relevancy, as may be deduced from our quality evaluation.However, the majority of the chosen research earned scores in the range of seven to five, with only five studies receiving scores of one or 1.5.

RQ4: In which health domains has gamification been investigated?

Although there was a minor variation in perception between the primary health issues

examined in categories, gamified apps and serious games were created for a variety of health topics.

The most often examined health domain in the chosen papers on both gamification and serious games was chronic illness management and rehabilitation.While there were numerous studies in the domain of gamified apps for physical exercise, there were relatively few studies on serious gaming in this area.For adults who are not sick, physical activity, as defined in this study, includes both fitness and exercise.The category of chronic illness management and rehabilitation included papers that reported recommended exercise for patients with chronic disease, such as in.

Chronic disease management and rehabilitation therefore encompass specialist healthcare aimed at assisting patients in regaining strength following illnesses and equipping individuals with long-term diseases with skills to better manage their health and well-being.Stroke, Diabetes, Alzheimer's disease, and Cardiovascular disease were among the health issues addressed in the publications in this area.Researchers in both disciplines (gamification and serious gaming) were interested in mental health; a total of eight publications explored the creation of gamified apps and serious games for persons with mental illnesses.These studies focused on two important health conditions: anxiety and attention deficit hyperactivity disorder (ADHD). ADHD is a mental illness characterized by a pattern of behavioural symptoms such as inattention, hyperactivity, and impulsivity.Two articles provided serious games aimed at reducing intellectual deficit and improving children's phonological abilities, respectively.In addition, five presentations on nutrition and personal hygiene were presented.The goal of these trials, according to the researchers, was to improve people's capacity to adopt healthy lifestyles by changing their food and hygiene habits.Given the different health areas examined in the research, it appears that there is a rising interest in the application of gamified health treatments and serious games in the treatment, rehabilitation, and management of chronic illness patients.

RQ5: What are the research types of the studies related to the gamification of e-Health?

Solution proposals are the most common research category, accounting for 54 percent of the papers chosen.This means that the creation and development of gamified e-Health apps and serious games is becoming increasingly popular among healthcare and ubiquitous technology experts.Evaluation research is the second most common study type in the chosen studies.About 35% of the articles examined looked at how well gamified e-Health treatments and full-fledged serious games worked in practise.Some of them also included a list of the advantages and disadvantages of using these treatments.However, this finding suggests that evaluative research into gamification and serious gaming in e-Health is limited.Indeed, instead of concentrating their efforts on analysing existing applications, researchers focus their efforts on suggesting new ideas to improve the area in issue.This is mostly due to the complexities and challenges that come with evaluating healthcare systems.To perform comprehensive health-related studies, licences and lengthy consents from numerous stakeholders are now required, making assessment even more onerous.In addition, this research comprised five reviews.A dozen gamified apps linked to health and wellness was investigated from various angles, including design issues in terms of usefulness and privacy.Despite this, no relevant review of health serious games was found in this research.

RQ6: Are the studies in the area empirically validated?

In scientific inquiry, empirical study is a critical step.Having qualitative data and metrics readily hand can make making judgments about the efficiency and dependability of the systems under consideration easier.There are several empirical approaches available.In this study, the majority of the papers relied on experiments (33 percent),

which were mostly carried out by students who expressed an interest in participating in the review.When looking for potential contributors, a typical method was to recruit them from colleges, hospitals, or through connections.Case studies were conducted in five articles to examine the effectiveness of gamified e-Health apps.Two case studies were done by a single patient who was monitored over an extended length of time in this group.As a result, these findings can scarcely be regarded scientifically sound.Case studies were also utilised in serious game research studies to obtain quantifiable data on the influence of these games on the improvement of participant's condition.

RQ7: What game mechanics have been used in gamifying e-Health applications?

Gamified e-Health apps and serious games are incorporating a variety of game concepts.The bulk of the research found that a combination of game elements was used to entice users to interact with the app.Feedback, incentives, advancement, and social aspects were among the most commonly utilised gamification components.The majority of the experiments included a simple game-like element that rewards users with numerical values for taking a certain action or a set of activities.After earning a specific number of points, this point-scoring system was usually connected with accomplishment prizes such as badges, trophies, and medals.Some researchers chose additional customized prizes in addition to these virtual benefits.For example, after completing the evaluations, the pain assessment app for teenagers with cancer rewarded users with a celebratory video-recorded acknowledgement. Furthermore, after completing the game's nutritious tasks, children were given real-world prizes such as a jump rope and a Frisbee.

RQ8: Which challenges are most frequently encountered during gamification?

Despite the fact that there are few researches examining the limits of gamification in e-Health, it was observed that using gamification methods in the e-Health sector is a vital and time-consuming procedure.The writers of the chosen articles tackled a number of issues that might jeopardise gamification and serious gaming's potential success.The long-term sustainability of gamification impacts on app users is one of the key problems.According to the researchers, the significant short-term effect on users' motivation and engagement is unlikely to last, since users' interest and excitement for the game-like elements appears to wane with time.Furthermore, several game mechanisms (e.g., points, badges) did not have a real health-related value in terms of the user's competency and health abilities, and they were occasionally shown incorrectly on the application's display.Participants in a nutritional serious game evaluation did not grasp the function of the partitioned progress bar or the number linked with it in this regard.To minimise misunderstandings and maximise users' game play experience, a straight, concise, and clear set of instructions would be necessary.Furthermore, some gamification programmes provide a meaningful reward for an action that does not involve a considerable effort and/or vice versa.

RQ9: What are the benefits of using gamified e-Health applications?

Despite the obstacles that have been identified as impeding gamification's potential in the e-Health field, the bulk of the research reviewed have shown that users can still benefit from gamified e-Health therapies and serious games.Perhaps the most significant benefit of gamification in the health context is that it ensures users' ongoing engagement and increases their immersion in the e-Health solution.Indeed, gamification aims to reorganize a normally dull task into something pleasant, competitive, and engaging by incorporating humorous characteristics of game experiences.This entails persuading users to stick to the app's activities on purpose.Similarly, in serious games, the combination of visual aesthetics and game mechanics encourages game play and player engagement while providing a high level of enjoyment and amusement.Gamification is designed to assist users feel positive emotional

states such as pleasure, relatedness, and self-esteem in addition to giving extrinsic incentive (rewards, feedback).As a result, favourable changes in users' behaviour are induced, which are helpful to their overall health and fitness.Furthermore, gamification was seen as an effective way to give a specific sort of help to patients with chronic diseases, such as boosting adherence to medication and treatment regimens.Serious games, on the other hand, were praised and viewed as a useful way to help individuals induce positive behavioural change in persons with chronic illnesses, owing to their powerful integrated game design.

Implications of the results

This comprehensive literature review's findings have ramifications for both researchers and practitioners working in the field of e-Health gamification.The motivating aspect of gamified applications and serious games need special attention from researchers.Extrinsic and intrinsic motivation should be fine-tuned to ensure a long-term commitment to the app.Furthermore, the results of this study reveal that the majority of research provided assessments over a short period of time, reducing the accuracy of the results.Gamified applications and serious games, particularly those dealing with rehabilitation and prevention, must thus be subjected to longer-term empirical evaluations in order to better understand the long-term sustainability of the game mechanics being integrated.Patients diagnosed with the health issue in question should also be involved from the beginning of the application or game's development.Because the seriousness of the application may be mitigated by the game-like elements, getting medical clearance might comfort consumers about the app's success in terms of health outcomes.Practitioners, on the other hand, must thoroughly analyse gamified apps and serious games in order to minimise any potential flaws that increase users' capacity to cheat, i.e., seek rewards while ignorant to the real health consequence.It may be worthwhile to include professional game designers throughout the entire process of developing the e-Health solution in order to benefit from their knowledge in terms of integrating well-thought-out and balanced game mechanics.Additionally, practitioners must remember the necessity of maintaining security and privacy to the degree that users' personal health data is properly safeguarded.

Sustainability and Gamification

Gamification is not a long-term process, according to the research (Hamari, 2015; Berger and Schrader, 2016), therefore sustainability is a major issue with this novel idea.(Hamari, 2015; Rodrigues, Oliveira, and Costa, 2016) defined intrinsic reward as "internal advantages gained from the use of technology or enjoyment derived from a website via motivators, and this enjoyment enhanced or sustained the usage."They went on to say that enjoyment and simplicity of use are linked to the utilisation of services.Furthermore, rather than a one-time behavioural event, marketing emphasises behaviour modification maintenance or durability.Marketers should focus on long-term positive interaction and establishing sustainability (Hamari and Koivisto, 2015; Harwood and Garry, 2015; Deterding and Deterding, 2016; Nakashima and Maruyama, 2017).As Fishbein and Ajzen (1975) pointed out in their theory of reasoned action, the usage of technological systems influences user behavioural intention, attitude, perceived ease of use, strategic value, and perceived usefulness directly or indirectly.According to (Davis et al. 1989; Berger and Schrader, 2016), perceived usefulness is a greater predictor of an individual's propensity to utilise a technological system (Brunello & Accademico, 2014; Yang, Asaad, and Dwivedi, 2017) addressed how including a user-centred design (UCD) may improve user attitudes about services by assisting users in seeing advantages or usefulness, as well as trying to alter behaviour.However, marketers, practitioners, and researchers are still grappling with the issue of gamification's long-term viability.

Managerial implications for future work

This study highlights the available research on gamification in e-Health through a thorough literature review.Nine research questions were used to examine these publications, including publishing source and trend, study kind, empirical type, gamification aspects, benefits and difficulties of gamification in e-Health.It was discovered that gamification and serious gaming in the e-Health domain just began to draw researchers' interest in the second half of 2010, with a peak year in 2014.Solution suggestions and research assessments were the two most common forms of research found.Approximately half of the studies lacked any kind of empirical proof.

Further empirical assessments are clearly needed to offer a rigorous validity of gamification's efficacy in e-Health.Another noteworthy finding is that chronic illness management and physical exercise are the most researched health domains in the literature.In terms of game mechanics, the majority of research found that incentives, feedback, and socialization are frequently used to gamify e-Health.Furthermore, the findings allowed us to discuss the merits and drawbacks of gamification in the context of e-Health.If the full potential of gamification is to be realised, we discovered that a number of critical concerns must be thoroughly examined.

Another future approach worth looking into is combining a behaviour change theory with the gamification process to ensure that game components may be used in a variety of ways to suit different user profiles.

Conclusion

Gamification has been on the rise in the study field over the past five years.Researchers and marketers are increasingly embracing the notion of gamification.According to the literature, this is a highly useful technology for the advanced corporate sector.Motivation is fundamentally connected to gamification.Furthermore, a person with intrinsic rewards might be more potent gamification motivators since it encourages customers to interact.Furthermore, a useful and efficient gamified design may make customers pleased and keep them coming back.Furthermore, through game components, gaming mechanisms with well-designed mechanics improve both internal and extrinsic drive.Users can be led to sustainability through perceived utility, perceived simplicity of use, and attitude.The difficulties associated with gamification include well-designed implementation processes and long-term sustainability.The purpose of this study was to examine student behaviour in a gamified learning environment utilising various learning techniques.According to the results of the activity created by the participants in this study, the most activity happened during school hours.The majority of the accesses took place on Mondays and Thursdays, indicating a low level of activity on weekends.The applied gamification design failed to inspire students to work more in their spare time, and it also failed to drive students to work consistently every day.Due to the unique impact, the first theoretical period began with strong participation data on the site.The number of interactions each day was considerably reduced in the second theoretical practical period, and some of the participation lost in the second period was restored in the third primarily practical session, although without reaching the data acquired at the start of the course.As a consequence, the PBL approach was shown to provide positive outcomes in terms of student engagement in the suggested gamification design.

References

Adukaite, A.; van Zyl, I.; Er, S.; Cantoni, L. Teacher perceptions on the use of digital gamified learning in tourism education: The case of South African secondary schools. Comput. Educ. 2017, 111, 172–190

Abel, J. P., Buff, C. L. and Burr, S. A. (2016) „Social Media and the Fear of Missing Out: Scale Development and Assessment , *Journal of Business & Economics Research (JBER)*, 14(1), p. 33. Doi: 10.19030/jber.v14i1.9554.

Agnieszka, W.-S (2014) Gamification as a New Trend in Marketing , *Marketing & Management of Innovations*, (4), pp. 57–64.

Andre, H. N. (2017) "Gamification as a platform for brand co-creation experiences" Doi: 10.1057/s41262-017-0055-3.

Bouwmeester, R.A.; de Kleijn, R.A.; Berg, I.E.V.D.; Cate, O.T.T.; van Rijen, H.V.; Westerveld, H.E. Flipping the medical classroom: Effect on workload, interactivity, motivation and retention of knowledge. Comput. Educ. 2019, 139, 118–128.

Koivisto, J. and Hamari, J. (2014) „Demographic differences in perceived benefits from gamification , *Computers in Human Behavior*. Elsevier Ltd, 35, pp. 179–188. Doi: 10.1016/j.chb.2014.03.007

Matallaoui, A. (2017) „How Effective Is "Exergamification"? A Systematic Review on the Effectiveness of Gamification Features in Exergames , pp. 3316–3325

Mitchell, R., Schuster, L. and Drennan, J. (2017) „Understanding how gamification influences behaviour in social marketing , *Australasian Marketing Journal (AMJ)*. Elsevier Ltd, 25(1), pp. 12–19. Doi: 10.1016/j.ausmj.2016.12.001

Morganti, L., Pallavicini, F., Cadel, E., Candelieri, A. and Archetti, F. (2017) Energy Research & Social Science Gaming for Earth: Serious games and gamification to engage consumers in pro-environmental behaviours for energy efficiency , 29(May), pp. 95–102. Doi: 10.1016/j.erss.2017.05.001

Nah, F. F., Zeng, Q., Telaprolu, V. R., Ayyappa, A. P. and Eschenbrenner, B. (2014) Gamification of Education: A Review of Literature , *1st International Conference on HCI in Business (HCIB 2014)*, 8527, pp. 401–409. Doi: 10.1007/978-3-319-07293-7

Nakashima, R. and Maruyama, T. (2017) ScienceDirect Science Direct Gamification Approach to Smartphone-app-based Gamification Approach to Smartphone -app-based Mobility Management Mobility Management , *Transportation Research Procedia*. Elsevier B.V., 25, pp. 2349–2360. Doi: 10.1016/j.trpro.2017.05.234

Pratap, S., Gupta, A., Mateen, A. and Mahto, K. (2016) Playing games, receiving gifts, creating experiences and building brands , *Marketing Intelligence & Planning*, 34(4), pp. 486–503. Doi: 10.1108/02634501011078138

Xu, F., Tian, F., Buhalis, D., Weber, J. and Zhang, H. (2016) „Tourists as Mobile Gamers: Gamification for Tourism Marketing Tourists as mobile gamers: Gamification , 8408(February). Doi: 10.1080/10548408.2015.1093999

Yang, Y., Asaad, Y. and Dwivedi, Y. (2017) Examining the impact of gamification on intention of engagement and brand attitude in the marketing context , *Computers in Human Behavior*. Elsevier Ltd. doi: 10.1016/j.chb.2017.03.066

Zichermann, G., & Cunningham, C. (2011) Gamification by design: Implementing game mechanics in web and mobile apps," O'Reilly Media, Inc.".