Helping Dwight – how gamification can improve CSR communication effectiveness?

Filip Wójcik
University of Warsaw

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Abstract:

Although the gamification gained substantial interest over the last decade, the results of applying it into corporate social responsibility communication are still very rare. The main goal of this study is to check the potential impact of gamification on communicating CSR issues. Moreover the examination was conducted concerning the correlations between income/education level and communication effectiveness with and without applied gamification. For the need of this study the survey was prepared, containing inter alia narration resting on helping Dwight to deal with the problems with adjusting to work environment, the problem often avoided in CSR communication research, especially gamified.

1. Introduction of Paper

Sustainable development is one of the crucial aspects for business operations to look up to (Li et al., 2020). A variety of environmental issues pose an enormous threat to sustainability inter alia deforestation, air pollution and global warming. Effective communication of sustainable initiatives is very important for corporations due to increasing pressures from stakeholders (Wolf, 2014) including clients, suppliers, employees and even government. Corporate social responsibility (CSR) is not only a growing trend, but it is becoming part of our day-to-day reality (Lin, Padliansyah and Lin, 2019). However, it is worth mentioning that although CSR is often associated with environmental sustainability, it also concentrates on other aspects connected with inter alia ethics, volunteering and some legal responsibilities regarding e.g. employee's sexual harassment. Sustainable wellbeing (Costanza et al., 2016) is one of topics in mentioned area that would benefit very much from the further research. Communication improvement of this part of corporate social responsibility can be very promising aspect to investigate. One of the way to do that is by implementing gamification.

Gamification is described as the use of game design elements in contexts other than games (Deterding et al., 2011) and has clearly been gaining in importance since 2011. There are many examples of the use of gamification in enterprises in many different fields, including marketing (Hofacker et al., 2016), however, the literature on the use of gamification in corporate social responsibility activities is still relatively scarce. One of very interesting actions in this area is CSR communication that has been assumed to provide an effective post-crisis strategy to mitigate the negative impact of crisis on the corporation and thereby realize the benefits of CSR (Ham & Kim, 2020) what can be very beneficial for companies considering current situation caused by COVID-19 pandemic.

One of the challenges that should be mentioned is the danger of stealing attention from the task. Taking into account the optimal stimulation theory, gamification can distract participants and pull them away from the task and sometimes it does (Liu, Santhanam and Webster, 2017).

2. Related work

As it comes to most relevant research, in their work Kateryna Maltseva, Christian Fieseler and Hannah Trittin-Ulbrich (2019) examined how gamification can increase the CSR communication effectiveness. The authors conducted 3 different questionnaires to examine their thesis. All of them were in the form of the survey, but every questionnaire was

concerning another topic (combating deforestation, preserving bird habitats and reducing the ecological footprint of food). The research could help to understand how this kind of CSR communication can be gamified effectively. Despite the ambivalence of the study's results, authors believe that the research adds new insights to literature both on corporate social responsibility communications and on gamification research. One of the conclusions from this work is the following: one of the findings of the research shows that gamification may not be a suitable tool to educate about sustainability issues. One of the experiment's results (with a gamified vs non-gamified survey) illustrated that the gamification of communication did not interest the participants with the deforestation problem than conventional, non-gamified framing. The interesting hypothesis is that gamification causes cognitive fatigue and people just don't have the energy to keep doing anything. But, according to authors' opinion, it seems that gamification, due to its association with having fun and good time (what took place in all three experiments). Perhaps such tasks mean that serious environmental problems contrast with the form in which they are administered, and the result is dissonance and negative outcome of the study.

Although, the topic has not been investigated enough, there are some studies that can confirm gamification of CSR communication to be possible (Wanick & Bui, 2019). The area that this study shall cover in the first instance is effectiveness of gamifying CSR communication. It is worth mentioning that most of the literature focuses on environmental issues, not the people challenges e.g. concerning ethics or problems with adjusting workplaces to young generations. There is very little data for gamifying CSR communication in case of people-related problems such as millennials at the workplace. This research will be focused on this exact problem.

1. 3. Methodology

For the purposes of this study, effectiveness was divided into 3 factors: engagement in the survey (if people are more engaged in filling a survey, they should remember more and maybe even make some actions concerning the issue, even though they do not believe in it 100%), perception of the problem (what do they think about the problem? Do they think that the issue is important?) and tendency to recommend it to a friend (maybe they didn't engage and do not take the problem seriously, but if they send the survey to a friend, maybe he/she will). All of those components should help improve CSR communication effectiveness.

Moreover the data on how exactly implement gamification in this area is residual. Except very few information in literature mentioned above, one can find it difficult to check exactly

which social or demographic groups are more/less susceptible to gamification in this particular case. For this research income level and education level were chosen.

After the literature review, it can be seen that there are still many blank points in the gamification of CSR communication area. The following Research Questions (RQs) were prepared to fill some of them:

- Research Question 1: What impact has gamification on the survey effectiveness?

a. RQ1a: What impact has gamification on the survey participations' engagement?

b. RQ1a: What impact has gamification on the survey participations' perception of the problem?

c. RQ1a: What impact has gamification on the survey participations' tendency to recommend the questionnaire to a friend?

- Research Question 2: How does gamification affect different income level groups?

- Research Question 3: How does gamification affect different education level groups?.

Study sample was based on an online survey of 206 respondents (65% female) who were recruited online via Facebook. Respondents are citizens Poland who were willing to fill the survey. 66% of participants were between 23-27 years old during the study.

The participants were randomly divided into two groups - experimental and control, 103 participants each. The difference was the introduction of gamification mechanisms and dynamics. Narration (helping Dwight to cope with stress at work), points (questions were the same, but no information about points was given in the control group) and feedback (related to points) were introduced.

The survey included questions about gender, age, education and income level. Then, the participants of the study were given a text to read concerning the problem of Millennials to adapt in the workplace. Later, they were given questions to the text, checking whether they had read the text carefully. At the end of the evaluated how they perceive the problem to adapt the workplace to the needs of Millennials and to what extent they would be willing to recommend a friend filling out the questionnaire.

The results were tested using the t-student test Pearson correlation coefficient. Perception of the problem, engagement in the survey and tendency to recommend it to a friend were the factors examined by t-student test to check if statistical significance can be seen. Then, the correlations between the characteristics of the participants (income and education level) and perception of the problem, engagement in the survey and the tendency to recommend it to a friend were examined for experimental and control groups of N=103 each.

In the survey, the level of monthly income in PLN should be marked out of the following options: 1.below 1000 2. 1000-2999 3. 3000-3999 4. 4000-4999 5. 5000 and more. As it comes to education level, the choice was as follows: 1. Elementary education 2. Secondary education 3. Higher (Bachelor or Engineer) 4. Higher (Master).

The narration in this survey was implemented by adding additional "slides" in the beginning with the text "You are the CEO of a company that helps people like Dwight adjust to new working conditions. Dwight has just changed jobs and is feeling very stressed out. He asks you for help. By taking part in the survey (with a quiz) you will help him find a solution to the problem". After that a respondent answered questions concerning his/her gender, age, income and education level. When that happened, Dwight appeared again on a screen with the text: "Dwight is very happy to meet you and counts on your help. On the next slide you will see the text, read it and answer the attached questions. Dwight will really be grateful to you." After completing the questions attached to the text, the slide with immediate feedback appeared. It had the information from Dwight on how many points did the participant receive and the text concerning level of Dwight's appreciation. Then, after questions about and perception of the problem and the tendency to recommend survey to a friend, there was one more slide with Dwight happy for participant finishing the survey. Although the narrative was selected for consistency with the topic of the workplace, it can be assumed that if another theme was implemented, that a larger group of respondents could identify themselves with, the effects would be clearer.

4. Results

The results of the study were divided into two groups. First, the research focused on examining the correlation of the gamification factor with the following elements.

Table 1: Correlation for income and education level (gamified and non-gamified group)

Factor tested with gamification effect	Pearson correlation coefficient	
	Gamified	Non-gamified
Income level		
Stimulation	-0,0373	-0,0743
Perception of the problem	0,1475	0,1366
Tendency to recommend	-0,0601	0,2583
Education level		
Stimulation	0,1490	0,0551
Perception of the problem	0,1725	0,0790
Tendency to recommend	-0,0359	0,0004

These calculations show that gamification can be used as a tool for making surveys more engaging, but the topic must be analysed further. The correlations between the characteristics

of the participants (income and education level) and factors examined above, (perception of the problem, engagement in the survey and the tendency to recommend it to a friend) for both - experimental and control group.

First, the relationship between income and the number of points scored in the quiz was examined. The results showed a correlation of -0.0373 for the experimental group and -0.0743 for the control group. It follows that the number of points obtained in the quiz did not depend on the level of income, both in the group completing the questionnaires containing gamification mechanisms, and in the group that did not have these mechanisms. Therefore, it is possible to draw a conclusion based on the above results that the gamification did not affect the correlation of the income level with the correctness of the answers to the questionnaire.

Then, the correlation between the income level and the assessment of the problem's significance (the problem of the need for companies to adapt to the needs of millennials) was examined. The correlation for the experimental group was 0.1475, and for the control group 0.1366. This means that here also the gamification mechanisms used in the survey did not play a significant role in influencing the change of this correlation.

The next step was to calculate the correlation between the income level and the willingness to recommend the survey to a friend. In the experimental group, this correlation was -0.0601. In the control group, it was 0.2583. Despite the fact that these are still not strong correlations, it can be seen that the gamification factor plays a fairly important role here. On the basis of the above data, it can be concluded that the implementation of gamification mechanisms (narration and points) may weaken the correlation between the respondents' income level and willingness to recommend a survey to a friend. This may come from the fact that in general, higher-income people may have a better understanding of how companies are adjusting to the needs of millennials. People working in large companies can easily see differences resulting from, for example, age ranges among employees, but also those resulting from the boss's management style. In very few cases (it is worth remembering that the correlation is still weak), they will be willing to recommend the survey to a friend. The introduction of appropriate gamification mechanisms may increase the overall chance of a recommendation, also making it interesting for people with lower income levels. However, looking at the correlation between the level of income and the assessment of the significance of the problem, it can be assumed that recommending a survey to friends by people with lower incomes has more to do with gamification than with noticing the problem. If one has fun completing the survey, he/she will recommend it to his/her friends, even if they don't understand the content or consider the topic irrelevant.

The next step was to examine the correlation of the level of education and factors mentioned earlier in this paper (perception of the problem, engagement in the survey and the tendency to recommend it to a friend). First, the correlation between the education level and the number of points scored in the quiz was examined. For the experimental group it was 0.149, and for the control group 0.0551. One can see a slight difference between the results. This means that gamification may play a minor role in increasing the correlation between the level of education and commitment to completing the survey. This may come from the fact that, as a rule, better educated people, to some level, should have less difficulty reading with comprehension than worse educated people. With the right motivation, caused by the mechanisms of gamification, this difference has become a little more visible. However, it is worth noting that the correlation is still weak. Perhaps with a larger research sample or other gamification mechanisms used, the results would be different, so it can be an interesting subject for further research.

The next step was to examine the correlation between the education level and the perception of the significance of the problem. The result for the experimental group was 0.1725, and for the control group it was 0.079. This shows that gamification has helped slightly increase this correlation. Following the assumption from [38] that gamification may even lower the respondents' sensitivity to the problem, it can be assumed that less educated people perceived the questionnaire as a fun game, and not a tool to draw attention to a given problem. However, the difference between the correlations is so small that it is a very bold assumption and a further study in this area should be carried out.

The last correlation counted was that between the education level and the tendency to recommend the survey to a friend. In the experimental group the result was equal to -0.0359, and in the control group 0.0004. With such weak correlations and such a small difference between them, it can be assumed that gamification did not affect the studied correlation in any significant way.

As it comes to conducting t-test, the two-tailed P values were examined for every factor. Only tendency to recommendation was statistically significant for gamified group (M= 3.93, SD= 1) and non-gamified group (M= 3.58, SD= 1.05) conditions; $t(204)=2.44$, $p = 0.016$. Stimulation' results were for gamified group (M= 2.03, SD= 0.83) and non-gamified group (M= 1.83, SD= 0.95) conditions; $t(204)=1.63$, $p = 0.104$. Perception of the problem's results were as follow: gamified group (M= 3.75, SD= 0.86) and non-gamified group (M= 3.77, SD= 0.82) conditions; $t(204)=0.17$, $p = 0.868$ According to RQ1, gamification can influence CSR communication, but in this particular case, only as it comes to spreading the news, not

necessarily understanding it or even engaging into the survey. As it comes to the perception of the problem, it had even very high two-tailed P value, what can confirm that due to the component of fun, it is difficult to rise a serious issue by playful framing [38]. It could be seen that stimulation's two-tailed P value is very close to the statistical significance level. That can mean that preparing longer survey and/or on the larger study sample, the correlation could have been stronger. Also, the person who wants to improve CSR communication can have different agenda, depending on for example company's goals or characteristic of a CSR issue (or even the project itself). So it is important to differentiate those factors and focus on them not necessarily equally in case of achieving particular goals.

5. Conclusions

Given the described results, there is no hard proof that gamification can help significantly in CSR communication. However, some light in the tunnel can be spotted. After examining the results, the list of conclusions is as following.

• Conclusion 1: Gamification can slightly improve CSR communication effectiveness, especially as it comes to spreading the news.

• Conclusion 2: Gamification can reduce the correlation between income level and tendency to recommend a survey to a friend.

• Conclusion 3: Gamification can slightly enhance the correlation between education level and engagement in the survey/perception of the problem.

The descriptions concerning each conclusion are stated below:

Conclusion 1: Gamification can slightly improve CSR communication effectiveness, but depending on what goal author wants to achieve. If it is connected with recommendations to a friend there is a chance, that gamification will help to increase the effectiveness of the communication. However, one can make an assumption based on this study that gamification can be useless tool in case of bringing somebody's attention to a serious problem.

Conclusion 2: Gamification can reduce the correlation between income level and tendency to recommend a survey to a friend. Because of the fact that the area of gamifying CSR communication, it is an important output of this research. This is one of the first information concerning income level and gamified CSR communication relation. It also can show (but more research is desirable) that gamification can reduce some inequalities regarding income level group for example in the case of targeting.

Conclusion 3: Gamification can slightly enhance the correlation between education level and engagement in the survey/perception of the problem. That it also one of the first

information concerning education level and gamified CSR communication. This conclusion can indicate that implementing gamification may increase engagement in the survey and/or perception of the problem among people with higher education or decrease those factors among participants with lower education level. It is worth mentioning that the correlation was very weak, so further research to investigate this topic is needed..

6. Limitations and further research

The first limitation of the study was the method of conducting research. First of all, if the sample could have been larger, the results probably would be more specific. The amount of participants was good enough for conducting pioneering study, but for the repetition or expanding this research – the sample should have been bigger. Next thing was the calculation methodology. If there was used another method instead of (or in addition to) t-student test and Pearson correlation coefficient, probably the data could have been examined more precisely. Another limitation is connected with naming. Maybe another author could disagree with dividing CSR communication effectiveness into 3 factors presented in this study, depending on the interpretation of the word "effectiveness". Also the method of measuring engagement by counting points gained in the quiz is questionable, but that is also the more the case about naming that methodology neglect.

As it comes to further research, it is important to confirm conclusions stated above on another (preferably larger) sample. The aspect that was mentioned in this study a few times – choice of gamification mechanisms – is very interesting in this type of research. Survey in this study contained two mechanisms – points and narration. What would have happened with the results if there were more of them introduced? The potential of implementing more mechanisms and in other way (for example - different narration) is practically limitless.

In this researched problem presented to the participants was concerning workplaces not being adjusted for Millennials' needs. As it was mentioned in the literature review, most of the similar work concentrates of environmental issues, no the people-related ones. Interesting approach would be to investigate the differences of gamifying communication of two problems – one concerning environment and second one people-related issues - and comparing it.

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