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MOTIVATION FOR STUDENTS: GAMIFICATION IN E-LEARNING

Introduction

Using games in education is not a new idea. Most people who learn out of their own, unforced, incentive take part in many types of traditional games and video games. It is also hard to imagine an internet user, that never took part in a simple game of solitaire. For many years, self-standing games have been successfully used in schools and universities as training aids. The mechanism of gamification is actually something else. The most popular definition states that gamification is:

- "the use of game design elements in a non-game context" [Dete11],
- "the integration of user-centered game design elements into non-game contexts" [Norm90].

From these definitions one can come to a conclusion that every learning process can be modified in order to use the mechanisms that are available in games. The main goal to utilize this mechanism is to raise motivation in people who are learning. The designed process of gamification must take the user into consideration, and not the university, for example, that wants to implement that mechanism. The process of gamification in e-Learning in the instance of universities can take place in such places as:

- training aid courses, such as e-Learning courses; so that gaming aspects may be used,
- he university e-Learning platform,
- both.

The purpose of this article is to present an innovative mechanism of gamification implemented on the platform of social learning. In the first part of the article was characterized the most common and easiest to implement mechanisms that occur in the case of courses and e-Learning platforms. The second

part of this article describes objectives of WeLearning platform, the third part is devoted to a presentation of created gamification mechanisms for e-Learning courses, users and the whole platform.

1. The mechanisms of gamification

The most popular ideas that can be easily used on a low-budget (creating a different game is a challenge and it usually takes up thousands of game designers' work hours, graphic designers' work hours, and game testers' work hours) in the instance of e-Learning courses are [Raym11]:

a. **Defining partial goals and learning effects** – courses, especially academic courses, usually contain hundreds of pages of information for the student to study through. In most instances, in order to check the student's progress, a test/exam is taken after the completion of the module(s). In complex games, the gamer has the option to choose different missions, from the easiest training missions to the most difficult task (of course the challenges should not be impossible to complete as to avoid the user getting put off by the game). After completing every task, the student should get a debriefing with information about his achievements, progress and an option to a more challenging level based on the knowledge the user gained up until this point. It is not easy to design such a course, because the topics often times are not strongly associated with one another as part of a subject.

b. **Ensuring debriefing information** – the student should obtain an articulate piece of information regarding every completed task/project. A simple "test result: 70%" does not suffice, nor does a plain correct answer sheet. Instead, next to every single question there should be an explanation as to why an answer is incorrect, or correct. Another useful information is the location of the user in the course. In games, the user always knows where he/she is (for example: location on a map) and always has access to help information. In e-Learning systems, the users get lost often, they don't know what to do, how to talk, or even how to ask for help should minor technical difficulties occur.

c. **Taking note of student progress** – the gamer always knows how advanced the mission is he/she is playing, or how many tasks he/she has to complete before he/she can go onto the next level. There usually are a few

progress bars on display. This is not obvious in e-Learning courses. The courses are designed with the help of interior tools that some of the most popular e-Learning platforms such as Moodle, or Blackboard do not have. The courses are designed with the help of e.g. Adobe Captivate that often times have progress bars. However, it is displayed within one module, and not the entire course. This problem can be resolved quite easily by displaying a user progress box (a form of reward for the student) after every single completed module/subject during his/her progress throughout the entire course.

d. **Defining a range of awards** – every person within the course as well as within the entire e-Learning system, should have sufficient information regarding the awards system explaining what has to be done to earn an award and within what timeframe and/or stage of the tasks at hand an award can be earned. Awards may be given out according to various requirements: after an x amount of pages are completed, after completing a certain amount of tasks, or alternatively, awards may be given out at random for every user at different stages. Awards may be temporary, meaning that they are merely displayed after the successful completion of a task and they do not add up to the total score, or they may be linked to the final mark.

e. **Utilizing other good designer's practice in creating games** [Kapp12] – every game consists of an interesting short description that encourages people to pick it up and play it, whereas courses, more often than not, possess a boring syllabus. The visual page in games is extraordinarily well built; an aspect that academic courses completely omit. Of course, what counts the most is the content of the material, but in the era of vast availability of various sorts of free repositories of graphics the task to ensure a game an attractive visual is not a difficult one and it is one that does not require high skill, or a long period of time to carry out. Every game is tested on users who bring the attention of the designers to the visual aspects, the arrangement of elements, and the navigation panel through their own suggestions. This rarely takes place in the process of launching e-Learning courses, or developing a new operating platform. People who will be using these platforms will spend a great amount of their time using these products.

Within an e-Learning platform of a university setting the following gaming elements can be additionally implemented:

1. **Avatar updates** [Raym11] – the skills and experience level of a gamer is most often visible by simply glancing upon his/her description and avatar. Players that complete additional missions can purchase additional inventory and upgrade the character they use in their game. After revealing the entire description of the user, one can take note of his/her best results, the amount of points earned, available inventory, and next missions that await completion. In academic e-Learning, these features do not exist. Every course is independent and the completion of one module even on a higher difficulty level does not affect achievements in others. Additionally, the learner does not have the ability to purchase additional inventory. Awards may come in different forms. Not all areas of the course have to be available to the learner from the start; besides point earning, awards may consist of the ability to use articles that normally come with a fee (but in this case they are made free of charge), participation in events that take place on campus, or even a chance to win a book published by the university. Every learner can have a visual symbol of their experience level next to their surname along with awards earned (badges, different icons, symbols, etc.).

2. **Utilizing social games** [SqJe03] – in social media, one may take note of the popularity of many varieties of games. It is surprising, because the games on social media websites are very simple and in contrast to other games available elsewhere, they are poorly developed and have poor graphics. The essence of their success lies in the possibility to play these games with friends and the ability to compare your results with theirs. In the classic e-Learning course, the learner has nothing but his own score to view. Only teachers have access to all the students simultaneously. This causes a drop in learning motivation among students. Some people do not care about how to properly present themselves, and in the moment of public display of their results, they care more about appearing good (score-wise) within their close group of friends and their teacher rather than contrasting their results with the group as a whole. If achieved results in various e-Learning courses were to be made visible for everyone to see, it would be hard to cover bad results in the next few courses.

In the description provided above it can be concluded that gamification can truly change the way people approach the course design and e-Learning plat-

forms on an in-depth level [Munt11]. When discussing gamification critically, one should not identify it merely with its exterior features that consist of points, badges, awards, and result charts. Adding these elements exclusively only trivializes problems and does not motivate people to learn. In the following sections other gamification mechanisms have been described as well as how they have been implemented in an innovative social learning platform that is being currently being developed – WeLearning.

2. The WeLearning platform

Tischner European University in Cracow is creating an innovative education model as a means to appease current student expectations and also to attune the university to socioeconomic changes in the following foundations:
–   social development,
–   the blended learning method,
–   open source philosophy.

As a part of this model, a diversified education offer that is displayed on the social learning platform came to be – it is called "WeLearning". The users of this platform are to create a community of active learners that participate in discussions, meetings and can create new articles on the platform. The goal of TEU is to make the philosophy of life-long learning among Poles more popular.

The designed system is intended to be an internet platform that will help to create and share knowledge, as well as to develop skills and a sense of community among like-minded individuals. This community is not intended to be made available exclusively for students, staff, and sympathizers of TEU, but from the very start it is intended to be open for everyone interested, regardless of age, level of education, or university affiliation. The only condition is a life-long hunger for knowledge and willingness to make new acquaintances with like-minded individuals. The interests of the users of the platform and their activities will be used as way to measure the job and education market. The university will then be able to plan its endeavors (for example: the opening of new courses of study, creating new specializations) to ensure the best qualifications for its graduates and to build an interesting additional offer (cultural events, trips, conferences with interesting people). The platform will use Web 2.0 tools in a unique way. They will be used in the process of creating, gathering, and verifying information and in the process this will create a community. They are not meant to be merely additions to the

classic e-Learning articles as seen on platforms of the likes of LCMS. The unique solution, which is not yet implemented in e-Learning systems in world renown and Polish universities alike is the motivational system that focuses on virtual currency. The name of the currency will go by the name of "talent", which will be used to "purchase" additional materials (schoolings, courses, etc.) and will be used in the grading of the knowledge and skills of the user. Talents will motivate the social media community to self-development, to comment on posted materials on the platform, and to be active creators of new materials.

3.   The mechanisms of gamification on WeLearning

The WeLearning platform consists of many modules in which mechanisms of gamification have been implemented, such as:
- tasks that have to be completed by the user, or a group before new tasks are unlocked on the next level of the DL course,
- progress bar (for example: page 2/30, 50% completed task), which allows the user to identify his/her location; it is implemented upon choosing a certificate,
- the awarding of badges upon completion of new levels,
- additional points (or better scoring privileges) for tasks carried out as part of a group that encourages users to do teamwork and meet new acquaintances,
- user ranking (sorted by points, level of activity in different categories: most active in discussions, most written articles, etc.),
- help for other users through trade of inventory, or points.

3.1. Talents – virtual currency
In order to implement the above mechanisms, it has been decided to create **talents,** a virtual currency, which is to be used by users of the platform. Talents can be earned through activity on the platform as well as **offline activity** (see Table 1). Every user can view their earned talents and use them by purchasing learning inventory. In the instance of earning talents for offline merits, the user must send an application to the administrator to receive talents. The mechanism of gamification has the goal of motivating the platform users even more.

Table 1

An exemplary amount of points allotted for Online platform activity

Type of activity	Amount of Talents	Granting
Adding Distance Learning course	30	After the publication of the course
Adding inphographics	10	After the publication of infographics
Adding e-book	1	After the publication of e-book
Running your own blog (lead = publish at least 5 per month)	20	Once at the end of the month
Adding links to valuable material on the Internet	3	After the designation as a valuable link by at least 10 people
Adding own Podcast	10	After the designation as a valuable link by at least 10 people
Adding educational movie (Youtube movie) made by someone else	1	After the designation as a valuable link by at least 10 people
Adding m-learning aplication	80	After publication of the application
Completion of the pre-prepared e-Learning course 5h	15	After passing the course, upon successful completion of the test
The monthly increase in the number of talents for a minimum of 10%	5	System calculates comparing the first and last day of the month
Bonus for the quality of the copy-rights materials	0 to 5	The system calculates the average of the user ratings (1-10) which globally copyright material gathered 1-2 – 1 bonus talent 3-4 – 2 talents 5-6 – 3 talents 7-8 – 4 talents 9-10 – 5 talents No copyright material – no score

Source: The analysis of expectations and system features of the WeLearning Social Media Learning Platform.

Since the platform resembles a social media website, it should not be a surprise that awards are a feature for posting high quality materials. Articles generated by users is one of the foundations of social learning. Many studies point out that 90% of social media users are passive article consumers, 9% are moderate article publishers, and about 1% users provide 90% of the entire material [Niel06]. This is why such a large amount of points should be awarded for posting lengthy, articulate articles that are highly valued by other users.

Additionally, platform users have the ability to earn additional points for offline activity (see Table 2).

Table 2

An exemplary amount of points allotted for offline platform activity

Type of activity	Amount of Talents	Granting
Performing in real life a short training/workshop (up to 4h)	30	After the training
Training completed after completing the survey on professional development and participation in a conversation with a professional advisor	15	After the conversation
Participation in a short WSE event (panel, display, read, talk, chat, etc..) – up to 4 hours	15	After the event, based on the attendance list
Taking advantage of short real life learning opportunities (trainings, workshops) – up to 4 hours	20	After the event, based on the attendance list
Taking advantage of long real life learning opportunities (trainings, workshops) – up to 8 hours	40	After the event, based on the attendance list

Source: The analysis of expectations and system features of the WeLearning Social Media Learning Platform.

The administrator that allots additional talents to a particular user writes in information regarding the offline activity that merited the user additional talents in order to avoid confusion. The charts presented above are exemplary and may be modified throughout the evolution and development of the platform. Allotting talents for offline activity has the aim to motivate platform users to participate in events organized by the university, to get them to better acquaint them with its offers, and to encourage users to interact within the platform community.

3.2. Cotillion badges

Platform users with a certain amount of talents can unlock new levels of difficulty (see Table 3). For every unlocked level a user gains a virtual badge known as a **cotillion.** The platform contains different types of badges, which differ from one another visually. Every user of the platform can identify the experience level of a user by looking at cotillions. It is worth mentioning, that cotillions are not related to the current amount of talents, but are calculated on the basis of historical data. For example, a user was very active, earned and accumulated 500 talents on his/her account and is on the 5th level, but decided to buy entry tickets to workshops for which he/she paid 300 talents, which subsequently resulted in his/her current balance to equate to 200 talents – he/she still remains on the 5th level. It can be said that talents define the current balance of a user, and cotillions reflect historical data.

Table 3

Exemplary experience levels of users

Level	Amount of "Talents"
0	0-25
1	26-50
2	51-99
3	100-199
4	200-299
5	300+

Source: The analysis of expectations and system features of the WeLearning Social Media Learning Platform.

Virtual currency cannot be purchased by real currency, because that would be immoral. Paid for materials and participation in different events may be paid for with real money, or talents. Users will have two options to choose from, for example, participation in an e-Learning course with a specialist as a lecturer for the price of 200 talents, or alternatively, 100 PLN. The option of purchasing talents could lead to a situation where users that have the necessary monetary funds would be able to do anything from the start, without putting in the required effort into their studies in order to become experts in a given field.

3.3. Statuses

After earning a certain amount of talents in a given sphere of activity, WeLearning participants should have the ability to earn additional prizes in the form of **statuses,** or titles. Here are some exemplary names of statuses:

- commentator (a person with the largest amount of valuable comments),
- expert (a person that posted the most highly valued articles on a specific subject such as e-Learning, or administration),
- traveler (a person that posted the most highly valued galleries and published many posts on the traveler's blog),
- organizer (a person that organized a large amount of real events for platform users),
- and many others.

One user can be an owner of many statuses.

3.4. Feedback

One of the foundations of gamification mechanisms is easy to understand information that should be immediate and provided in a clear, simple way. Every platform user has access to articulate information regarding talents earned by him/her, or by other users (see Table 4). Information regarding talents, cotillions, and statuses is viewable on the user's profile.

Table 4

An Exemplary list of earned talents on the WeLearning platform by the user

Date	Type of activity	Amount of Talents
10.12.2012	Adding Infographics	1
10.11.2012	Adding valuable commentary	2

Source: The analysis of expectations and system features of the WeLearning Social Media Learning Platform.

Information regarding talents contains the merited activity, the amount of points awarded, and the date. The implementation of this mechanism ensures full transparency and eliminates suspicion of foul play.

3.5. Additional rewards

The most active users of the platform will have access to additional prizes in the form of paid for materials, course discounts, workshops, and post-graduate certification courses organized by the university and other universities as part of a collaborative effort between universities. In future development of the platform, promotional offers by outside companies can be implemented into the system. Companies interested in advertising their products/services, or wishing to consult their strategies with consumers can have access to the system (and use crowdsourcing – a process in which an organization outsources tasks traditionally carried out by workers to an unidentified, usually broad group of people, instead of a chosen small group of experts). Exemplary prizes may be made available to users of the platform by outside firms in the form of [Lipi13]:

– discount offers for courses and workshops organized by platform associated firms,
– material prizes, such as products of a particular company,
– financial prizes; awarded for providing the best idea in the process of a social problem resolving activity put forth by a company,
– internships/apprenticeships.

Implementing outsider prizes should raise the level of motivation in platform users, especially if the prizes are particularly attractive and adequate to the effort required in order to win them. Points earned for academic performance on the platform and commercial activity should be separated, possibly by creating two different ranking systems, or designing them in two different colors in a chart that displays earned talents as a way to differentiate between the two sources.

Summary

The proposed mechanisms of gamification are innovations for higher education in Poland. Only after the full launch of the platform will it be known if the designed functionality that are found in business and marketing will turn out to be equally effective in higher education. One of the possible dangers is the lack of engagement/participation on behalf of the people using the system, particularly in the instance of a prize/award shortage. Paradoxically, such prize/award systems are proven to be ineffective for people with a high sense of inner motivation [Nich12]. That is why the proposed mechanisms should serve as an exterior source of motivation for people whose inner motivation is lacking. The moment award systems and rankings will be launched, users could feel largely controlled. Another

negative possibility may be the chance of implementing an unhealthy environment of rivalry that would result in a decreased willingness in users to help others and users to be less keen on engaging in collaborative group work. However, it appears that this is an interesting experiment in Poland that will provide us with answers to the effectivenss of utilizing gamification in higher education.

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MECHANIZM GRYWALIZACJI NA PLATFORMIE E-LEARNINGOWEJ SPOSOBEM NA WZROST MOTYWACJI STUDENTÓW

Streszczenie

W ostatnich latach wiele firm wykorzystuje w działaniach marketingowych mechanizmy grywalizacji. Również w edukacji wiele procesów związanych z nauczaniem może być tak zmodyfikowanych, aby wykorzystywać mechanizmy dostępne w grach. Głównym celem tych działań jest spowodowanie wzrostu zaangażowania osób uczących się. W artykule przedstawiono projekt innowacyjnej platformy kształcenia społecznościowego na poziomie szkolnictwa wyższego, uwzględniającej mechanizmy grywalizacji. Omówiono szczegółowo system motywacyjny oparty na wirtualnej walucie nazwanej Talentami i jego możliwy wpływ na zachowania użytkowników platformy.