



WINNOVATORS

Boosting entrepreneurial and
STEAM capacity

Game elements for the Winnovators

WINNOVATORS project

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WINNOVATORS

“Boosting young women entrepreneurial spirit and skills to become the Women INNOVATORS of the future”

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Table 1 Document Factsheet

| Document History | | | |
|------------------|------------|--|--------|
| Version | Date | Main modification | Entity |
| Draft 1 | 19/02/2022 | Initial ideas about badge system, unit structure and leaderboards | |
| Draft 2 | 31/03/2022 | Literature review-based listing of possible types of badges. | |
| Draft 3 | 19/04/2022 | Added function, structure, and interaction of badges | |
| Draft 4 | 17/05/2022 | Badges reflect quality of work and performance (3 levels – bronze, silver, gold). Challenge badges. Ideas about Karma System | |
| Consolidated | 14/06/2022 | Badges represents competences based on Winnovators competence framework | |

| | | | |
|--------------|------------|---|--|
| Consolidated | 20/06/2022 | Added details about incorporating a badge system into Winnovators web platform. | |
| Final Draft | 05/09/2022 | Basics, Awarding, Badge View, Leveling system, Leaderboards | |
| Final ver 1 | 02/10/2022 | Corrections according to the functionalities in Winnovator web platform | |
| Revision | 16/11/2022 | The internal revision was made by TLU | |
| Final ver 2 | | Finished document | |

Table 2: Document History

PROJECT PARTNERS



TALLINN UNIVERSITY (Estonia)

<https://www.tlu.ee/en>



Univerza v Ljubljani

UNIVERZA V LJUBLJANI | University of Ljubljana
(Slovenia)

<https://www.uni-lj.si/university/>



BADEN | Balkan Distance Education Network
(Serbia)

<http://badennet.net/>



VITECO
elearning solutions

VITECO Srl | Vitale Tecnologie Comunicazione
(Italy)

<https://vitecolearning.eu/en/>

ICEBERG⁺

ICEBERG Consulting Srl (Romania)

<https://www.iceberg.ro/>



UDRUŽENJE POSLOVNIH
ŽENA SRBIJE

UDRUZENJE POSLOVNIH ZENA SRBIJE |
Association of Business Women in Serbia (Serbia)

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SINERGIE Sinergie Società Consortile a
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PUBLISHABLE SUMMARY

The badge system was designed to support the acquisition of competencies from each of the five different categories identified in the Winnovator Competency Framework (see Winnovators' D.1.1). Students participating in project activities will earn badges for completing general learning activities and overcoming challenges. Our goal is to motivate them to achieve better work results, participate in all scheduled activities and prevent them from giving up. The greatest emphasis has been placed on rewarding badges in Challenges where participants must apply the competencies they have acquired in general learning activities. To promote self-directed learning and collaboration with peers and mentors, we allowed participants to award badges to each other, award them to a student (and vice versa), and even award them to themselves. This can be done in consultation with the mentor who awards the badges in the Winnovators web space. To avoid devaluing the importance of badges, we have limited the number of badges that can be awarded. So Winnovators must think very carefully about who they award their badge to and for what purpose, and this encourages them to self-reflect and think about their work processes. We have also made it possible for multiple instances of the same badge to be retrieved and this is recorded in the system. These competencies then become superpowers that allow us to identify areas where we cannot improve, while also providing motivation to improve. We have also developed a system that promotes healthy competition. Studies have shown that this has a positive effect on motivation for some people, while demotivating others. We have adapted the system so that users of the online environment can decide for themselves with whom they want to share their achievements.

KEY MESSAGES:

- The badges reflect the competences acquired by the participant.
- The badges are intended to motivate participants to produce high-quality work and help combat the high dropout rates in online education.
- The badges can be obtained for general learning activities and participating in challenges.
- A limited number of badges may be awarded to each other or to themselves in consultation with the mentor who awards the badge(s) in the Winnovators web space. This encourages collaboration and self-regulation.
- Promotion of healthy competition by including the option to limit the access to view the badges.

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INTRODUCTION

Digital badge is a representation of an accomplishment, interest or affiliation that is visual, available online, and contains metadata including links that help explain the context, meaning, process and result of an activity (Gibson et al., 2013). Badges are used in virtual environments to engage, motivate, encourage participation, and affect behavior (Cucchiara et al., 2014; Falkner & Falkner, 2014; For et al., 2015; Burke, 2016; Facey-Shaw, 2017). They are used to capture learning across contexts, motivate participation, award innovation, promote identity, develop reputation among social communities and represent expertise in an area (Gibson et al., 2013; Strmecki et al., 2015; Goodyear & Nathan-Roberts, 2017; Plass et al., 2020).

The Winnovators project sought to leverage the benefits of using badges in the educational process to increase motivation to learn, encourage persistence, reward excellence, and promote self-efficacy and self-regulation. Our goal is for trainees to acquire competencies in the five areas we identified in the Winnovators educational practices (see Winnovators D.1.1): 1) learning to be, 2) learning to value, 3) learning to live and work together, 4) learning to comprehend and contribute, and 5) learning to empower.

For this reason, we decided to develop a badge system where each badge represents a specific competency from the Winnovators Competency Framework (see Winnovators D.1.1). In this way, the badges reflect the competencies achieved. With the badges, we wanted to support both aspects of learning in the Winnovators online platform: general learning activities and challenges. We focused particularly on the challenges, as they represent active forms of work that involve applying previously acquired knowledge to concrete situations. With the badges, we also wanted to encourage collaboration between participants and enable the development of self-regulation and self-efficacy skills. We achieved this by ensuring that badges were not only awarded by mentors, but could be awarded by participants to each other, to their assigned student, or even to themselves. Technically, this is done in consultation with the mentor who awards the badges in the Winnovators web space. In order not to devalue the badges, we used ideas from the so-called karma system, where the awarding of positive incentives is limited. The number of badges that can be awarded is specified in the challenge rules. The number of badges in each phase of the challenge is determined by the authors. The mentor keeps track of how many badges have been awarded and makes sure that the limits are respected. So the number of badges you can award to someone else or to yourself is limited, so the participant really has to think about who and what they want to award them to. This was done to encourage self-reflection and metacognitive processes.

To motivate participants to work hard and perform well, we have developed a leveling system that rewards participation in various activities that help participants acquire key competencies. The system promotes the acquisition of competencies in all five areas of the competency framework by awarding a certain number of badges in each area with a specific title: Bronze, Silver, and Gold Winnovator. We also wanted to reward the repeated acquisition of a specific competency, which in this way becomes an individual superpower in a gamified environment.

For many people, achievements give them the extra motivation of being able to show them off to others. We have taken this aspect into account, with caution towards those who are demotivated by potential competition. We have therefore made the system so that achievements are only visible to those individuals with whom we have connected within the Winnovators online environment.

BADGE SYSTEM

Basics

Badge = competence

The basic idea of the badge system is that **a badge always represents a competence**. In short, badge equals competency. There are *five types of competencies*: 1) learning to be, 2) learning to value, 3) learning to live and work together, 4) learning to comprehend and contribute, and 5) learning to empower. A badge can be awarded for each competency in a competency group.

To make them easy to distinguish, we will *color code* the badges according to the competency group from which a particular badge comes. Therefore, each competency group will have its own color (e.g., all badges representing competencies from the "learning to be" group will be yellow).

Badge is awarded at lessons level

Badge(s) will be awarded *for completing a lesson* in the Winnovator web platform. We have chosen to award badges only at the lesson level to avoid the risk of collecting too many badges. The authors will specify the competencies for each lesson and the criteria for successful completion of that lesson. If the Winnovator/Change Agent meets the criteria, she/he will be awarded the badge(s).

Badge awarding

How can a badge be obtained?

Badges can be earned for completion of independent study (Module – General learning resources) and/or group activities (Module - Challenges). Badges for general learning activities can be awarded by the Winnovator web platform <https://winnovators-space.eu/> automatically. Badges for challenges, obviously, cannot be awarded automatically, therefore they are awarded by or through mentors.

Who can issue/receive a badge?

There are several different "issuer -> receiver" combinations in relation to the type of learning module.

General learning activities

- Automatically by the Winnovator web platform -> Winnovator/Change Agent

Challenges

Badges that can be issued/received in challenges are rewarded in *each phase* of the challenge. There are three ways of issuing the badge:

- Mentor -> Winnovator, Change Agent
- Change Agent <-> Winnovator (both ways, through a Mentor)
- Winnovator -> other Winnovator (through a Mentor)
- Winnovator to herself (through a Mentor)

It is also possible for a Winnovator/Change Agent to award a badge to another Winnovator/Change Agent or to herself. In this case, the badge is awarded through a Mentor. The Winnovator/Change Agent instructs the Mentor to award a badge to him or to another Winnovator/Change Agent. The Mentor does this manually.

The number of badges Winnovator can award to itself, and its colleagues is limited in each phase of the challenge. The number of badges a mentor can award to a Winnovator/Change Agent is also limited. The table below shows the maximum number of badges for each type of issuer/recipient combination in each phase of the challenge. How many badges a mentor can award to a Winnovator or change agent depends on the badges the authors have provided for each lesson. Since this varies from lesson to lesson, we have used the symbol "?" in the table. Please note that these are not exact rules, as they have yet to be determined through testing in Winnovator project pilots. We would also like to point out that the restrictions will be monitored by a mentor, as they cannot be automated in an online environment. He will be able to do this through his own record of badges awarded, or he will be able to analyze log files for this purpose.

| PHASE 1 | PHASE 2 | ... | PHASE 5 |
|--|--|------------|--|
| 1 BADGE WINnovator to herself | 2 BADGES WINnovator to herself | | 5 BADGES WINnovator to herself |
| 3 BADGES WINnovator to her peers | 5 BADGES WINnovator to her peers | | 10 BADGES WINnovator to her peers |
| ? limit BADGES Mentor to WINnovator Change Agent | ? limit BADGES Mentor to WINnovator Change Agent | | ? limit BADGES Mentor to WINnovator Change Agent |

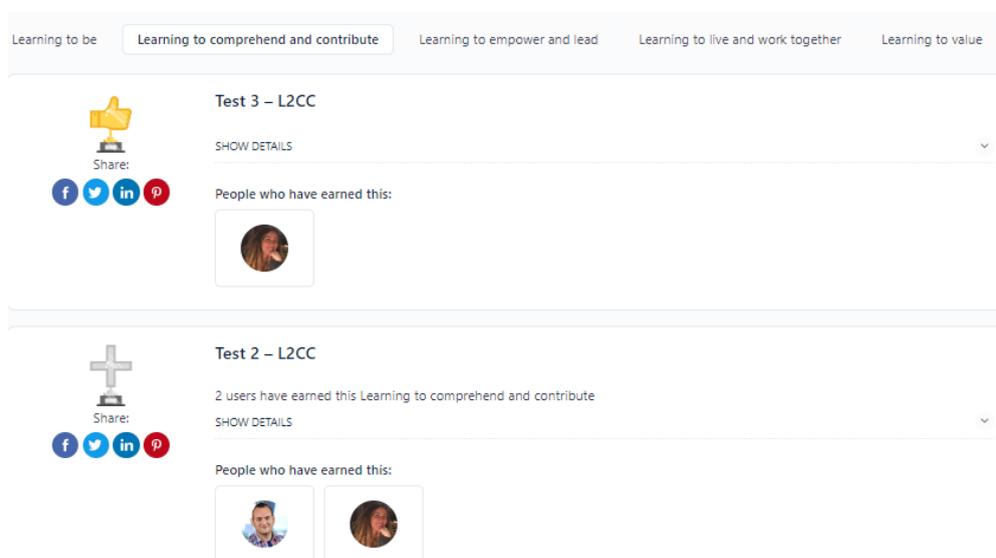
Rules for awarding badges at different stages of the challenge

In the case where Winnovator awards a badge to another Winnovator, she/he must provide an explanation of why she awarded that particular badge. This can be done via an input field where she can specify the reason for awarding the badge. The reason is then displayed in the description of the badge in the badge view of the Winnovator who received the badge.

Badge View (inventory)

General idea

There will be a separate view showing all badges Winnovator or Change Agent has collected so far. In this view, badges will be displayed separately by competency group (in tabs). Badges from the same group will be displayed in the form of a list. The badges of a specific competence area are displayed by clicking on the corresponding tab.



Badge View in Winnovators web platform

Collecting several of the same badge

Different lessons can award the same competency and therefore a same badge.

For example, the competence "Creative, generating ideas" can be earned by completing different lessons. In these cases, each of the same badge will be displayed separately in a list as an individual element. This is because the part in the description that explains how you achieve the badge is different for each one. Upon earning a certain number of the same badge, the Winnovator/Change Agent automatically receives a new badge representing multiple earning of the same competency/badge. Note that the new badge can be issued automatically but cannot replace other(s)! It is a new badge added to others! The exact rules will be determined when we test the badge system.

For example, if Winnovator receives ten "Creative, Generate Ideas" badges, the new golden "Creative, Generate Ideas" badge will be automatically added to her inventory. The 10 badges on the basis of which she received a golden badge will still be visible. Golden badge will represent that this competence is the "superpower" of Winnovator/Change Agent.

Potential problems/other possibilities

There is a potential problem if we find that the competencies are not sufficiently repeated in lessons to earn the bronze, silver, or gold badge. Possible solution is not to count the same badges but badges from the same category and reward a special badge for e.g., ten badges from the same competency group.

This is to be decided based on a list of competencies defined by the authors for each lesson.

Both possibilities are technically possible to implement.

Leveling system

WINNOVATOR/Change Agent levels

WINnovator/Change Agent can reach four different levels:

1. Basic level
2. Level 1 – BRONZE WINNOVATOR
3. Level 2 – SILVER WINNOVATOR
4. Level 3 – GOLD WINNOVATOR

Rules for reaching a certain level

The exact rules for achieving each level will be determined later when we test the badge system. The general rule is that the WINnovator/Change Agent must achieve a minimum number of badges (competencies) in each of the five categories to reach that level.

For example, to reach the 1st level (bronze), she must have at least one badge in each competence category. The exact rules are yet to be decided based on a list of competencies defined by the authors for each lesson.

Leaderboards

The leaderboards show the current list of Winnovators, ordered by the number of badges earned. This can be potentially demotivating for Winnovator/Change Agent, so we decided that the leaderboards will only be visible to mentors (teachers). There was discussion about introducing relative rankings, where a Winnovator can only see three other Winnovators who are above or below them. This idea also has a possible drawback, as some Winnovators/Change Agents may not feel comfortable with the idea of their score being visible to others. A possible solution is to allow a participant to see the achievements of another member on her profile if the participants are connected inside the web platform.

CONCLUSIONS

The presented system for integrating gamification elements into the Winnovators online learning environment is based on awarding the acquisition of competencies covered by the Winnovators competency framework (see Winnovators D1.1). Badges reflecting the competencies can be earned in general learning activities and challenges. In the challenges, the badges encourage participation and self-regulation. The system is designed in a way that does not devalue the importance of the badges. We have adhered to the principle of free choice in the presentation of achievements so as not to disadvantage those who are not encouraged to learn better by the sharing of achievements and the resulting competition. The badge system will be further developed and optimized during the piloting of the learning activities.

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