

Gamified Moodle Course in a Corporate Environment

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Abstract

In a company that spans the globe with over 10,000 employees, 300+ offices with operations in 70 countries, Moodle has provided the opportunity for employees from all over the world to participate in courses that build their own learning and growth as well as contributing to an overall increase in productivity for the company. In this document we will present a research made in this corporate learning environment. As Moodle and GAC Corporate Academy evolve, the time has come to investigate a different learning approach: gamification. While there are several researches on the value and risks of gamified learning (Burke, 2012), this research is going to examine a gamified approach in this specific business environment.

Keywords

Moodle, gamification, corporate academy, GAC, GAClearn, GAC Academy, GCA, e-learning

Introduction

GAC Corporate Academy (GCA) is the corporate learning organisation of the GAC (Gulf Agency Company) Group. Learning organisation is a term that describes the companies that facilitate its members and continuously transform themselves (Pedler, Byrgogyne and Boydell, 1997). It is a place where people are continually discovering how they create their reality and how they can change it. (Senge, 1990)

GAC Group provides shipping, logistics and marine services in over 300 offices and 70 countries around the world. GCA operates as a semi-autonomous business unit as part of GAC Corporate Head Office based in Jebel Ali, Dubai, United Arab Emirates. GCA offers a wide range of professional development programs that directly address the GAC Strategic Plan. Its courses are based on state-of-the-art e-learning technology built on the Moodle learning management system.

At the moment (2013) GCA occupies 6 full time staff and over 15 external facilitators. It serves over 60 GAC Group operating company clients and runs around 100 courses per year. The 90% of those courses are conducted online, through GAClearn Moodle site.

GCA Overview

GCA was established in 2007 in response to GAC's Vision X – Global Reach (VX-GR) strategy, which was a five-year plan that identified the need for GAC to invest in human resource development at all levels within the organisation. It then played an integral role in the following Vision Y – Global Values (VY-GV) five-year plan, contributing to the achievement of the Group's learning and growth objectives that included building "Skilful and Motivated People". In 2013 GAC launched its latest strategic plan, Vision Z – Global Performance (VZ-GP) and according to the Group Chairman, Bjorn Engblom "GCA is the central transmission station of the GAC Spirit, which forms the basis of the Group corporate culture based on loyalty, commitment to quality service, valuing of people and building relationships".

With the focus on Global Performance, GCA courses aim to enhance both individual and Group performance through its course portfolio. GCA offers a wide range of courses which are divided into seven categories: Foundation; Business English; Business Operations; Commercial; Professional Development and Leadership; Finance, Quality and Innovation; Specialised courses. Aligning with the latest GAC tagline for VZ-GP, "Delivering your strategy.", GCA launched its new tagline in 2013 "Delivering your learning strategy."

Course development

Early in GCA's development, the team experimented with the use of off-the-shelf course material for several specialised course areas. Though due to contract and agreement restrictions with the content provider, that material could not be tailored to the GCA context.

Since then an internal course development process is being followed. This process is utilising ADDIE framework and has five main steps: Align, Design, Develop, Implement and Evaluate (Van Merriënboer, 1997). The Align phase is the investigating phase, where the company strategy and the market trends are taken into account. Usually the Regional Vice Presidents are the Course Ambassadors, and those who have the authority to request a course be developed and operated. The Ambassador assists in defining the scope of the project, relevant subject matter experts, resources and the timeline. New courses are always evaluated on the basis of how they fit within the current Strategic Plan and take the company towards achieving it. As Cole, Cole and Henrick underline in the Moodle 2.0 for Business (2001): "Business strategy is meant to help enable, development of a solution, solution implementation, training, measurement, and finally circling around back to the goals to ensure an appropriate ROI (return on investment)."

As soon as the strategic need for a course has been identified, the Design process begins. For this stage, one person is identified as the Course Owner, usually from high managerial level. Course Owners describe the course objectives and advise who can be the course Subject Matter Expert. Then Subject Matter Experts are invited to write course content and review existing course materials for accuracy and currency (Khan, 2004). Subject Matter Experts are also company's active managers with business experience and knowledge of the market, and they are chosen for this task to eliminate the risks of an inaccurate, incomplete, not authentic, redundant, conflicting information (Rosenberg, 2013). During the Development phase, an Instructional Designer establishes the course framework, providing consultation on instructional strategies and techniques for e-learning contents and resources (Khan, 2004).

When the course draft is close to complete, it is transitioned into the Moodle for a pilot run. And this take us forward to the Implementation phase. Of course each course ends up with an Evaluation phase that contains both formative and summative assessment. Formative assessment consists a range of formal and informal assessment procedures employed in course, guided and monitored by facilitators during the learning process in order to modify teaching and learning activities to improve student attainment (Crooks, 2001). Summative assessment is also taken place during the evaluation phase, usually in the form of a mastery quiz or a final assignment. Once the pilot is completed participant' evaluations (both summative and formative) are being examined. These consists important feedback, which is utilised by the design and development team to revise the course materials for improvement. (Khan, 2004). After the end of the pilot is need to measure if participants used the course as it was intended (Cole, Cole, Henrick, 2001).

This process is ideal for a corporate learning environment, because: it allows rapid course development – streamlined to take between just 6 weeks and 3 months; it ensures relevance to workplace operations, since they are built internally; it brings tacit knowledge into explicit form; and it allows on-the-spot improvements and adjustments to meet the needs of a particular class or facilitator.

Pedagogy and Methodology

GCA is a learning organisation, based on social constructivism (Senge, 1990; Vygotsky, 1978). Social constructivism is based on the idea that people learn better when they build their own knowledge based on experience and relationships, and apply it to their environment. Martin Nystrand (1996) points out that "social constructivism promotes retention and in-depth processing associated with the cognitive manipulation of information". The focus of this approach is learning rather than teaching, which puts the learner at the centre of the learning process and the teacher in the role of 'facilitator'. (Bauersfeld, 1995).

Social constructivism pedagogy aligns closely with the idea of learning organisations (Senge, 1990). This approach gives participants the ability all over the GAC World to share stories and build the future together. E-learning brings a formalised learning process to participants who do not need to attend a centralised education

point. Their new knowledge is often subtly transferred when an appropriate situation arises, raising the standard of practice overall, making the entire workplace a learning environment and participants become more critical and involved in daily processes.

The GCA model brings in “agnostic facilitators” as a guide and mentor for the courses to co-create the learning experience. Facilitators are key people in the whole e-learning process. As it has been proved from several researches, teaching presence in the online learning environment are associated with increased affect and motivation (Baker, 2012; Russo & Benson, 2005). In GCA facilitators are independent consultants who bring their own set of learning experiences and make for an efficient and cost effective solution. The role of the facilitator is to act as the central resource for course operations, and is the point-of-contact between participants and the GCA Team. The course facilitator manages each course and guides participants to desired outcomes. Specifically they are responsible for: day-to-day facilitation, course administration, participants’ assessment/grading, performance reports, course feedback/evaluation (Bonk, Wisner, Lee 2004).

The social constructionist pedagogy at the heart of Moodle forms the ideal platform for GCA courses, because the courses themselves are rooted in real world practical knowledge and experience rather than purely theoretical learning. In GCA, this model translates in the form of interactive courses that are activity and discussion-based and relate directly to the participants’ experience in the workplace. The courses usually take place over eight weeks and require from three to five hours per week from participants to complete the activities in their own time. Just this year the Academy following the needs of its audience for shorter and quicker courses, introduced a four-week course scheme.

Introduction to the GAC World Course

GCA's flagship course is the Introduction to the GAC World. This is the first course run in GCA and it is always first in demand. This course is designed to increase employees' (new starters or veterans) understanding of how the GAC Group and GAC operating companies function in their international business environment. GAC is an almost 60 years old company and its history is not something that can be shown or described within a short session between experienced and newer employees. Thus this course along with Compliance and Ethics (CNE) and Health, Safety, Security and Environment (HSSE) are the three prerequisite courses for a new employee. Specifically, IGW and CNE must be completed during new employee's probation phase.

IGW course covers the following topics: GAC History; GAC Spirit; People and Organisation; Products and Services; The GAC Code – HSSE and Ethics; The GAC Brand; Group IT; GAC Strategy and Measurement. These topics are organised in pairs and delivered in a four week course: Week 1 - History and Future of the GAC Group; Week 2 - GAC DNA; Week 3 - GAC Citizenship; Week 4 - GAC Spirit and the GAC Code.

IGW was the very first course launched in GCA, its pilot run on March 2007. Since then each year run approximately 20 IGW iterations and it remains one of the first in demand courses, if you consider that so far only the 20% of the company's force has taken the course – 2338 employees completed it successfully from 10.000 people.

IGW is one of the most basic courses for GAC as it is strengthens employee's relation with the company. A recent internal, predictive research showed that participants who complete IGW successfully have 50% less chances to quit the company. The following table contains specific evidences.

Table 4: IGW Predictive Analysis

	New Joiners 2010 - 2012	Head Count	Resigned	Resigned %
IGW participants	2391	599	45	7%
IGW absentees		1792	233	13%

Between 2010 and 2012, 2391 new employees joined the company. 599 of them attained the IGW course and only 45 resigned. At the same time from the 1792 new joiners who did not attain the IGW, 233 resigned. This is almost the double percentage of those who took the course.

IGW Research

In 2007, the IGW course was designed as an 8-week course. It has successfully run over 120 iterations since its launch. IGW in its initial version contained also some GAClearn basic training among other activities. This helped ensure the audience, mostly new to e-learning, was provided an opportunity to evolve their skill within the course and thereby ensure a successful outcome. With the advent of 2013, the concept of e-learning has become part of the GAC culture and nomenclature. As such, it was a good time to evolve the course to be leaner, remove unnecessary culture creating components and focus on new tools and technologies to increase participants engagement and better deliver course learning outcomes. As it is mentioned in Gartner's research, Gamifications 2020: What is the future of gamification: "Organisations must begin now to prepare for, and take advantage of, the changes that gamification will enable."

The research is being conducted as follows: two IGW courses have been created, containing the same content. The one course follows a typical course design, while the second one has been gamified (Pelling, 2011), meaning that game mechanics have been used to improve participants' engagement. (Huotari and Hamari, 2012; Deterding et al. 2011). The courses launched on 4th August 2013 and they have been facilitated by two different, yet both experienced, GCA Certified Facilitators following the same GCA standard facilitation process. This process includes weekly course release, daily news forum posts with guidelines and sum ups, activity grading and feedback, escalation for less active. Note that both facilitators have basic Moodle skills to moderate but not create an e-course.

IGW1336 – Typical Version

In the typical IGW version, general section contains an introduction, general information (about GAClearn courses, the specific course and the course assessment), followed by the two main course forums (news forum and a coffee-shop forum), a confirmation choice and an "update profile" activity.

Each week then begins with an introduction and specific learning outcomes. After that, two lessons of studying material and questions are following. Lesson questions got some generic feedback like "Congratulations!", "That's right!", "Not quite, try again" etc. in an effort to increase engagement. Then a variety of activities are used and each module ends with a checklist. Activities are tailored to meet the learning outcomes and weights have been assigned in each one, as shown in the table below. Last week, despite the standard stuff, contains also a course evaluation with bonus points and a mastery quiz, with 24 random questions extracted from the self-assessed lessons. Note that the course pass grade is 70%.

Table 2: IGW Typical - Gradebook

Week	Activity 1	%	Activity 2	%	Activity 3	%	Total
0	Profile assignment	10%					10%
1	Forum activity	10%					10%
2	Crossword quiz	10%	Forum activity	10%			20%
3	Database activity	10%	Forum activity	10%			20%
4	Forum activity	10%	Mastery quiz	20%	Course evaluation	10%	40%

Although this is the typical version of the course, some gamifying components have been used: activity completion, conditional restrictions for Week 1 (participants get access to the first week after they have completed general information, course confirmation and profile activity) and of course the crossword, a game itself. Activity completion is being set as follows: in labels – no activity completion indicator; in resources – automatically when conditions are met (view); in assignment (profile) – automatically when conditions are met (submit online text); in lessons, forum, crossword, database, quiz and questionnaire – automatically when conditions are met (grade); and in forum activities – automatically when conditions are met (need at least 3 posts). Note also that feedback comments have been enabled in assignment and database.

IGW1337 – Gamified Version

The gamified version has been created on the basis of the typical one, where game design elements have been implemented (Deterding, 2011). Key components of games are goals, rules, challenges, and interaction. The goal in this course is to evolve from an Applicant into a Master, getting through the stages of Newbie, Apprentice and Skilled. The rules are simple: work on time and target to the highest performance. There are in total 10 challenges, two for every level and several channels for user-to-user and system-user interaction that have been used.

In this IGW version, the only thing that a participant could see when accessing the course for the first time was the general section containing a short preface about the gamified concept of this course and the confirmation choice, while in the typical version the whole general section was visible. By confirming his participation the rest of the general section was opening, showing up an introduction to the course, the two main course forums (news forum and a coffee-shop forum), and the “update profile” activity. The first week becomes available after the completion of the profile activity.

Each week begins with introduction and learning outcomes. After that, two lessons of studying material and questions are following. In the first week, the first lesson includes questions, while the second lesson contains only content pages and it is being followed by a quiz. By the second week onwards some autonomy has been provided to participants, since they are allowed to choose between a lesson with questions and a content lesson accompanied by a quiz (Rock, 2008). This choice is being setup using labels with manual activity completion.

Then the same activities found in the typical course are used here, renamed from 'activities' to 'challenges' with a sequential numbering. Also the weight indicators have been altered to points. As the typical course this one is also facilitated so forums, messages and emails allow interaction with facilitator and peers. Feedback comments are enabled in assignment and database, while in lessons with questions, questions have feedback (eg. “Well done!”, “Are you sure?” etc.) and in lessons accompanied by a quiz, quizzes have an overall feedback. Moreover in challenges a label with little man icon appears depending the grade given from facilitators, to boost participants for top performance and work update. When top score is achieved a different label with point indicators appears as score counter (Gigya, 2012). Each module ends with a checklist. As usual the course pass grade is 70%. The gradebook of the gamified course has been organised as shown below.

Table 3: IGW Gamified - Gradebook

Week	Level	Activity 1	%	Activity 2	%	Total
0-1	Applicant	Ch1: Profile assignment	10%	Ch2: Forum activity	10%	10%
2	Newbie	Ch3: Forum activity	10%	Ch4: Forum activity	10%	20%
3	Apprentice	Ch5: Crossword quiz	10%	Ch6: Forum activity	10%	20%
4	Skilled	Ch7: Database activity	10%	Ch8: Course evaluation	5%	15%
5	Master	Ch9: Forum activity	20%	Ch10: Extra miles	5%	25%

Despite the basics, other gaming elements have been incorporated in Moodle. These are badges and leaderboards (Enders, 2013). The course contains six badges: Getting started badge for confirming participation; Applicant badge for completing challenges 1 and 2; Newbie badge for completing challenges 3 and 4; Apprentice badge for completing challenges 5 and 6; Skilled badge for completing challenges 7 and 8; and Master badge for completing challenges 9, 10. While challenges 1 – 9 are stand alone activities, challenge 10 is an on-going process, a treasure hunt (Ridden, 2013). As students get through the content (provided through lessons) a little icon, ‘the extra mile’ icon, appears. This little icon is a link to a resource or a small quiz activity. Extra miles have been used as a surprising factor. There are in total six extra miles, one in each of the first six lessons. As in every social environment social recognition and rewards are important (Rock, 2008). Thus a random glossary entry block has been used as “Highlights” block to display the highlight quotes from participants’ forum entries. Quiz results blocks have been added in all quiz pages and quiz result block for mastery quiz has been added into the main course page (leaderboard), to display the 5 top scorers. Activity completion has been set the same way as in the typical version, except the choices for lessons (labels) where manual completion has been enabled.

Research analysis

Both courses launched on the 4th August for the first time. These are the pilot runs for both versions. In the typical version (IGW1336) 20 participants have been enrolled and in the gamified version (IGW1337) 21. Most of the participants in both classes had a previous experience in GAClearn, with the Compliance and Ethics self-paced course, so this run was actually their first facilitated course experience.

Before move on to the course analysis it is important to mention that in gamified version a discovery learning approach had been attempted (Bruner, 1961). Thus despite the general introduction on the gamification no other explanations or guidelines have been provided.

IGW1336 course overview – typical version

Facilitator started the course with some confusion about the new procedures of the course (in particular relating to profiles). This tentativeness may have influenced her behaviour as facilitator in the first days of the week. During the first week there were no participant removals, while minor escalation (around the 10%) of the class had been done. Class activity started normally and progressed with half participants following a good pace during the first days of the course. Examining course activity reports it is interesting to see that participants checked thoroughly the general information provided in general section. In the second week facilitator worked with much more certainty as the first obstacles had been overcome. Two participants removed for reasons related to their limited time and job tasks – class continued with 18 participants. Class activity was stable and most participants managed to complete the second week on time. Facilitator started the third week with confidence. Two more participants removed early this week after another escalation process – 16 people left in class. Class activity was stable and most participants managed to complete the third week on time. Most of them the last day of the current week, though as facilitator commented this is a quite common phenomenon. Facilitator worked the last week of the course with the same confidence. No escalation and no removals have been done, though several “reminders” have been sent, to boost participants’ performance. Good class pace has been noted and all graded activities have been completed on time. The poor interaction in Coffee Shop, in the “farewell” discussion though, indicates probably a loose social connection.

IGW1337 course overview – gamified version

The facilitator who run this course had a better understanding of it, but was absent due to travel on days 3 and 4. This could have affected the level of performance in the first half of the week (Russo and Benson, 2005). Three participants removed for reasons unrelated to the course – class continued with 18 participants. Major escalation took place on 3rd and 5th days of the week – escalated around the 80% of the class. Class activity started extremely slowly, with minimal activity before the 5th day of the week, although most participants confirmed their participation. Significant participant activity noticed after the second escalation, while only four people got the extra miles from the first two lessons. In the second week facilitator was trying to stabilise the class participation and interest. Three more participants removed after another escalation process, leaving the class with 15 participants. Although this is not very common in GCA courses, Waleed Jameel – Business Manager of the Academy, certifies that six removals from a course have been happened several times in the past and attributes the fact to a bad timing. Class seemed to have found its pace and completed Week 2 challenges. It is interesting though that although they seem to be interested on completing the challenges, they tend to bypass the learning material, including the extra miles. Less than 1/3 of the class took the four first extra miles and this is probably related to the minimal instructions (Mayer, 2004). Week 3 started again slowly, and facilitator escalated 60% of the class on the fourth day. There was no response to coffee shop posts made that week, but by the end of the week, most participants had completed the basic lessons and activities. In the final week facilitator posted invitation to farewell discussion in the coffee shop but no responses posted until the last couple of days of the week. Facilitator escalated more than 50% of the class on the fourth day, pointing out their current grade and activities still to complete. Response was that most completed the activities.

Participants' overall performance

IGW1336 class had a slightly better overall performance than the 1337 class, achieving 86.74% course total towards the 82.38% of the other class. In the typical course only one person failed, while in the second three. From those who succeeded IGW1336 had more top scorers, while in 1337 top score distribution was more balanced. Comparisons of the score performance from the two courses are illustrated in the following graphs.

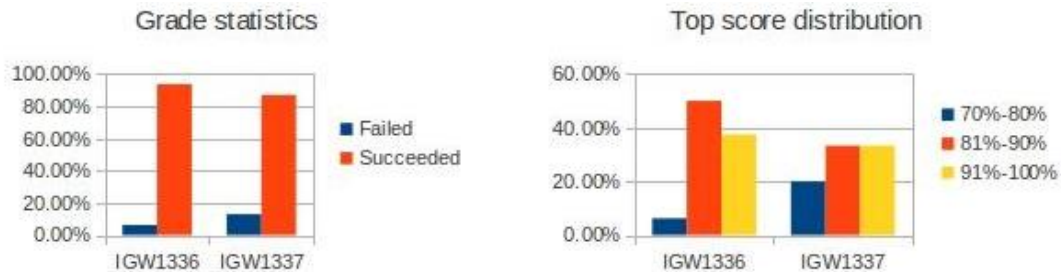


Figure 2: Comparative graphical representation of grade statistics and top score distribution

FAC feedback

In the question “All in all, how you would described this run? In terms of class dynamic, course layout and course content”, the facilitator of the IGW1336 course answered: “In one word: balanced. Class dynamic was a bit sluggish to start but improved in week 2 with full participation in week 4. Course layout was fine, no changes needed and course content was perfect. Lessons work well as they allow participants to interact whilst reading – which means not boring for them. Proof enough that most did all the lessons.”

In the same question the facilitator of the gamified course answered: “This was a particularly slow course, with minimal social interaction which meant that the learning from interaction was also limited. There was a significant sense of confusion about how to do activities like collecting the ‘Extra Miles’. The layout and lessons were fine, but the content could be improved so that participants had clearer instructions on how to use the gamification elements.”

Participants feedback

In the fourth week a course evaluation graded questionnaire is conducted in both courses that contains questions about: the overall experience of e-learning, the resources, the activities, the content, the interaction, the facilitator, the assessment, the course overall experience and the gamification elements in IGW1337.

From the participants replies from both courses it was evident that they seemed to enjoy e-learning experience and mostly the ability to interact with colleagues from all around the world. Time management problems and low forum participation were mentioned as the weak points. In both courses participants were satisfied with the resources and the activities, where only one participant in the gamified course rate them as "satisfactory". In the typical version, 44% of the participants found the interaction "Good", while the same percentage in the gamified course found it "Very good". Facilitator efforts have been highly appreciated since the majority of participants rate them with "Excellent" in both courses. Also over the 75% of the participants agreed that they have been assessed fairly. It is interesting to note that the 100% of participants agreed that the assessment instructions were clear in the IGW1336 course, while only one participant said the opposite for the assessment instructions in the gamified course where actually no instructions had been provided initially and minimal instructions provided during the run. In the gamified course, 93% found it "very good"/"excellent" and 7% "satisfactory". In the typical course, 87% considered the course as "very good"/"excellent" and 12% "good". In the typical course 75% said that course matched their expectations and 25% said that course exceeded their expectations. The percentages for that in the gamified course were divided 50%-50%.

Regarding the gamified elements, participants rate them in terms of interest and fun in a 1-5 scale. As it shown in the following graphs Quiz results were the most interesting element and Extra miles the second in line. While the Highlights and Choices regarding the lessons are coming next. In terms of fun Crossword is coming first and

Extra miles among with Quiz results are coming second, followed by Little man icons and Choices regarding the lessons.

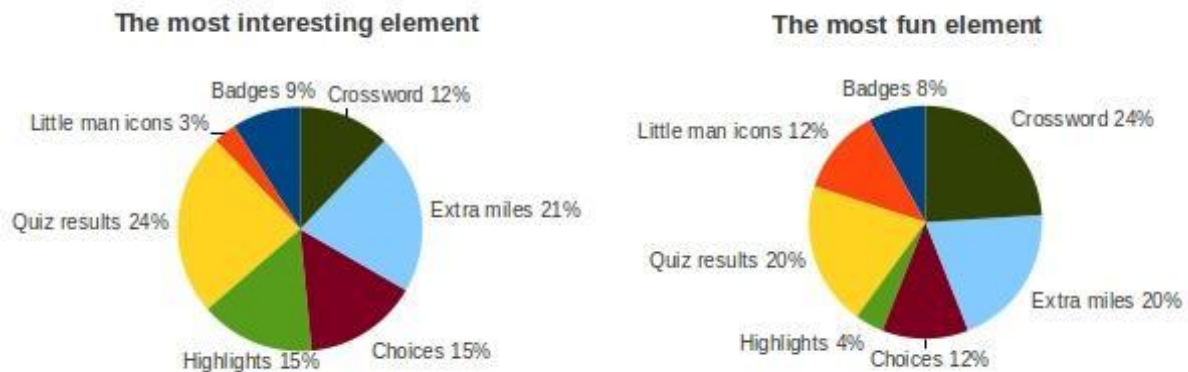


Figure 3: Graphical representation of gamification elements in terms of interest and fun

Conclusion

From the specific research, the usefulness or not of gamification cannot be categorically proven. As both facilitators pointed out, the classes were not completely representative, since usually GCA classes have a better dynamic/activity. Particularly the class who took the gamified course was the slowest one that facilitator had ever seen – yet the 97% of the class managed to graduate.

In comparing participant activity, it seems that the specific target group felt more comfortable with curricular focus rather than unstructured exploration (Mayer, 2004). Judging from the results, explicit information about the course did not make a big difference, although it seems that the lack of the bigger picture and the uncertainty on how the course would evolve created a "threat" which resulted in poor engagement during the course (Rock, 2008). Thus in a future attempt, clear instructions would be suggested.

Based on participant feedback, some gamification elements could be easily adopted and incorporated in GCA courses. These are: the Quiz results block, the Crossword (game module, a third party plugin), Highlights (random glossary entry), Choices (labels that lead into conditional activities), Little man icons (conditional labels that appear depending the grade achieved in an activity).

The Extra miles (resources treasure hunt) was considered both interesting and fun by participants, but did not have the expected success, since only two participants managed to gather all six resources and graduate as "Masters". Facilitator believes that this was due to the minimal instructions, but it also underlines the fact that most participants preferred to skip the lessons (where the Extra Miles were located) and took only the accompanying quiz. This can attributed to participants' limited time, as they are supposed to take the course during working hours. Another technical obstacle for implementing successfully a treasure hunt is Activities block. GCA Facilitators are relying on it, yet it should not be used, as it provides an additional access point to the material, which is located in the orphaned section.

Also badges did not seem to impress the specific audience, perhaps because they are not yet officially recognised/introduced by the academy and the company. Last but not least, from this research it became clear that the success in a gamified course relies a lot on participants' commitment, as in any other course, which it is by default quite unpredictable.

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