Teacher Guide for Gamification

by Tibor Prievara

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1 Introduction

Approaches to gamification abound, with two main definitions widely used:

Game-based learning is accepted to refer to applying games in the learning environment, whereas gamification is the use of game mechanics in non-game contexts. One such context is education and the classroom. Simply put, game-based learning aims to gamify educational content, whereas gamification focuses on gamifying the learning process. This entails some major differences in applying these principles in practice.

Game-based learning

Game-based learning is specific in terms of content (e.g. a game about the survival in a village after a tsunami), as well as universal and all-encompassing in its approach, which involves developing a complex set of skills through students playing. One clear disadvantage, however, is obviously the limitation of the narrow focus on content with minimal or no option for a teacher to tailor the game to suit their classes' specific needs (in class the boundaries of the curriculum might limit the application of any specific game (e.g. if my class needs to learn about water cycle, I might be hard put to find a suitable game for my 12-year-old students. Furthermore, there is the issue of flexibility of the content in a game, which is usually beyond the control of the teacher (I cannot add anther feature or complement a video game with information I need my students to access). Finally, there is the question of viability (can I make it work in the classroom? do I have to buy enough licenses for students to play, provide game consoles or computers to run the games etc.).

Gamification

Unlike game-based learning, gamification aspires to help teachers create a gamified context within which any educational content (regardless of discipline) might be fitted. This allows for a lot of room for teachers to manoeuvre while providing a clear framework for all parts of the learning cycle. In order to introduce gamified assessment in your classroom, the following steps might be taken:

a) Choose an online tool to track student progress

It is simply practical to choose an online platform where students have instant access to their results and points. Note that this might not be practicable with 5-year-olds, where you might decide to discard all online applications and use the classroom wall to help pupils track their progress using a variety of visual aids, rather than applying a point-based system that the kids might not be able to comprehend.

(NB: Later, in section 5 there is a list and a brief introduction to some popular tools to this end.)

b) Steer away from day-to-day planning and concentrate on study periods (taking 1 month approximately)

At the very core of gamified assessment is the concept of mid-term planning. Short- and long-term planning have been traditionally part of a teacher's mindset (understanding the limits and requirements of the curriculum as well as designing lesson plans for tomorrow's classes), however, more often than not, we forget to plan for the next month ahead. Gamification will gently force you to do that, since one of the basic tenets is self-regulation, which is next to impossible within the context of just one lesson. There needs to be student output based on instruction, which is followed by varied feedback from the teacher and the student's peers, which, in turn, opens the door for the student to change course, if needed, and create a different learning path to achieve their goals.

c) Decide what learning outcomes you would like to measure.

In planning a study period, the first crucially important step is to decide what learning outcomes would be desirable at the end of the period. These might be best expressed through 'can-do statements' to clarify your plans. It might also be useful to communicate these to the students, so they know what to expect.

d) Design tools and decide on techniques to assess and track student progress.

Throughout the study period, students should receive a wide variety of feedback in different shapes and forms. The structure of assessment and tracking on student progress is up to the teacher and should employ the simple principle of addition of students' results as opposed to counting averages.

It is probably best to try and design a set of assessment tools to be used during the study period (to start with, this requires nothing but what you as a teacher would do anyway, project work, self-assessment, tests, presentations etc.). The only difference here is in planning the study period you have to think ahead and create a meaningful framework for continuous assessment. As all the work students do during the study period will be marked not in isolation but as milestones in a process, knowing how they get there, at which point they need to submit certain elements of their work or give proof of their understanding the material, will be crucial.

e) Fit assessment to the point system - weigh points carefully

As one possible way to design a gamified system of assessment is to award students points at each stage of their work (e.g. for a test they have done, for an infographic they submitted etc.), how many points each of these milestones are worth is of the utmost importance. Students are practical and will lean towards tasks that carry more rewards. This is both a danger and an opportunity. With careful weighing you might steer students towards certain tasks you deem central to the understanding of the material at hand, however, by miscalculating you might end up with students demotivated having reached the number of points needed to complete the study period successfully without ever even engaging in activities that might be considered vital by the teacher.

f) Publish goals, forms any types of assessment with provisional dates in a calendar.

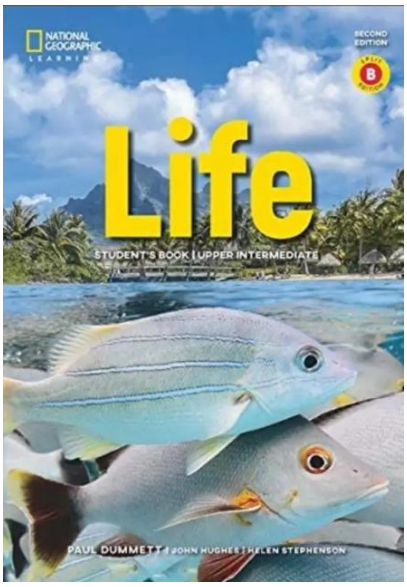
Stress and anxiety mostly stem from students feeling at the mercy of teachers' whims, as well as the feeling of frustration at the inability to control what is happening to them in the classroom. Having all the requirements set in advance of a study period, with forms of assessment clearly laid out, students will experience control and a significant reduction in anxiety. Also, by understanding that not being able to do something for the first time and making mistakes, slipping up, is part of the process of learning, students will feel more inclined towards trying new approaches and gaining new skills. This is conveyed to them through the simple way of doing away with counting averages and focusing on addition of points rewarded for achievements. The worst case scenario is being awarded 0 points for unsuccessful attempts that have no bearing on the final mark whatsoever.

g) Go about your daily business and administer points as students work

Finally, it is important to understand that introducing such a system of assessment and feedback does not require you to drastically change the way you work in a classroom. The example below in section 2 is but a possible illustration of how such a system might be introduced and used. Due to its immense flexibility, everybody is invited to adapt, rather than to adopt is, to suit their specific needs.

2. Step-by-step guide to introducing a gamified study period

Below is an example as to how a study period might be designed around some given classroom material. It is for a B2 level class of 15-year-old teenagers, based on the coursebook Life (published by National Geographic – see cover blow).



The topic was 'storytelling' with the following parts. describing places, describing a 'key moment' in a story, visual storytelling, the Grimm brothers – 'how grim are the Grimm tales?' – and describing a real-life situation.

To spice things, there was some grammar and usage as well as a video about an extraordinary achievement.

The whole unit was about one-month worth of material to cover. Below is a brief outline as to how such a task might be approached, what practical steps taken in creating the lesson designs of the study period.

a) Choose an online tool to track student progress

In order to keep track of student progress, I did choose an online application called MotiMore (www.motimore.com). It is currently in beta and is available in Hungarian only, but the English version is in the pipeline already. Nevertheless, there is a study period planner, where I could simply input all the information in a clear structure and the platform will generate the study period for my students. To suit your classroom, however, you might choose from a number of websites, some of which are listed in section 5 below).

b) Decide what learning outcomes you would like to measure.

These were the desired learner outcomes for this study period:

i) Students can form and correctly use the narrative past tenses

ii) Students can describe places for dramatic effect

iii) Students understand the importance of key events in a story and are able to describe them effectively

iv) Students can debate about the Grimm brothers' stories – are these really suitable bedtime stories for children?

v) Students gain experience of digital storytelling

vi) Students can describe events (fictional or real) and use the above techniques to create powerful stories.

vii) Students will expand their active and functional vocabulary while undertaking the tasks above.

These are clearly complex and many-faceted tasks to achieve. Throughout the study period I need to constantly remind myself of the main goals, in case I'm tempted to wander away on a whim, something that by some experts is coined the Little Red Riding Hood effect, whereby teachers slowly but steadily lose focus of the lesson in an attempt to chase an idea that has raised their interest on the spot, hijacking the lesson plan. This is, of course, not to say that spontaneity has no place in the classroom but is here simply to state that referring to the original goals, teachers are less likely to lose the overall focus of the study period.

c) So, how do we go about operationalizing the above-mentioned pedagogical goals?

First of all, the course book gives some guidance, the backbone of the study period is based on that, if you like. It is comforting to many that in order to introduce gamified assessment, one does not need to discard course books, digital materials, or anything else that they might have previously found useful.

Secondly, I have decided on the following steps:

i) I would like students to create one longer story by the end of the one month

ii) I would also like them to practice elements of storytelling but spoken and written

iii) I need them to use correct grammar in their work

iv) I would like them to improve their vocabulary

v) I would like them to work in groups to turn the study period into a class project (note that gamification and gamified assessment yields itself readily to project-based learning and instruction)

vi) I would like them to develop critical thinking

Finally, there has to be a plan incorporating all the above. Therefore, the product is a story created by one student accompanied by visuals. Throughout the month, students will hand in shorter pieces of work, do some online tests and activities, give one another feedback and finally create a booklet of stories to share with their peers and parents.

In order to reach that goal, the following milestones and forms of assessment will be deployed:

i) Tell a story – bring a story to class and share. What is a story, were the stories fun? What makes a story interesting – needs analysis and understanding students' cognitive schemata on the topic.

ii) Describing the backdrop to a story – vocabulary, grammar, organisation. Task: create an atmospheric description of a place.

iii) A key moment – how to pivot a story on key moments – looking at examples, designing stories and discussing and creating such turning points that are unexpected, fun, surprising etc.

iv) Practice the narrative tenses – workbook, controlled practice to free practice

v) Digital storytelling – use an online tool to tell your first story – remember to include a key moment!

vi) Debate based on a reading of the Grimm brothers: are these really kids' stories? Are they suitable to be read to children? research work: read through some of the Grimms' work, and find elements that you deem unsuitable. Discussion and debate ensues.

vii) Real-life situations: describe one, learn how to make such a story more effective

viii) Finally: finish your own story or write a new one, submit your work to your peers, receive feedback, rewrite your story and publish it

d) Design tools and decide on techniques to track student progress.

Below is a list of what students will be expected to do during this study period, for which they will earn points:

i) Bring a story (any story to class)

ii) Learn structures to describe a place and create a few such short descriptions

iii) Use each other's stories and insert key moments to change the course of actions in the story – hand in your list of key moments

iv) Create a story in pairs, using a digital storytelling tool to share with the class

v) Do online and paper-based practices to practice grammar and vocabulary

vi) Prepare for a debate – research on the Grimms, analyse the content of the tales and come to a conclusion – spoken debate, written input from stories, written follow-up

vii) Create a final story, submit its written form but perform it to your peers in class

e) Fit measurement to the point system - weigh points carefully

Here comes the difficult part. So far, we have established what goals to achieve, what output is expected of the students and finally, what form these will take. Possibly, the most sensitive part of designing a study period is the allocating points to achievement. Here is one way to do it (below, in section 3, there is a description as to why 1700 points are to be reached by the end of the study period).

i) Bring a story (any story to class) – (100 HP)

ii) Learn structures to describe a place and create a few such short descriptions – 150 HP/description (max 450 HP)

iii) Use each other's stories and insert key moments to change the course of actions in the story – hand in your list of key moments (350 HP)

iv) Create a story in pairs, using a digital storytelling tool to share with the class (600 HP)

v) Do online and paper-based practices to practice grammar and vocabulary (200 HP)

vi) Prepare for a debate – research on the Grimms, analyse the content of the tales and come to a conclusion – spoken debate, written input from stories, written follow-up (500 HP)

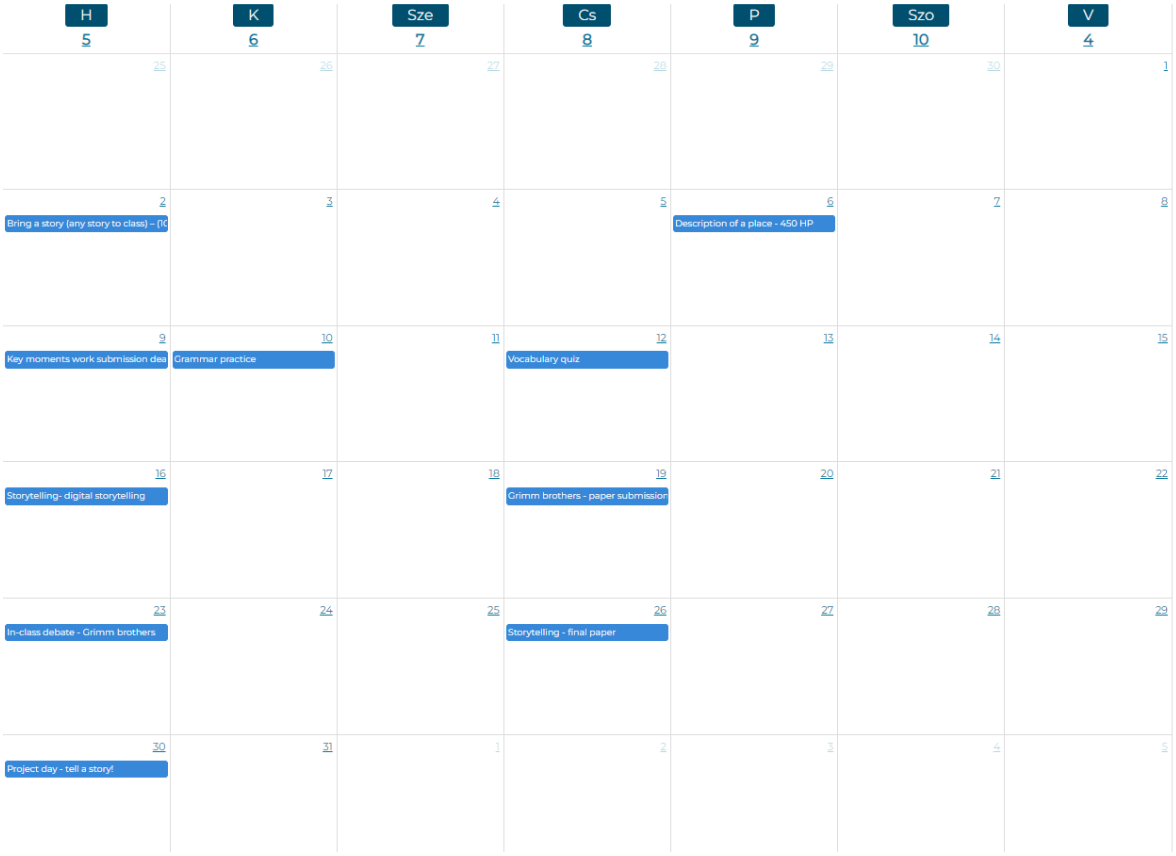
vii) Create a final story, submit its written form but perform it to your peers in class (700 HP)

f) Publish goals, forms any types of assessment with provisional dates in a calendar.

This will help students prepare and understand what is required of them at certain points of the study period. Also, it will force teachers' hands a little to plan ahead and clearly think through what the next month is going to look like.

Obviously, times and dates might be altered to accommodate changes in the school's overall schedule. New points of assessment might also be introduced as well, so one should not think of this as a rigid structure with no room for manoeuvre. Still, it is of utmost importance that the backbone of the plan stay intact.

Below is an example of what the calendar might look like for the study period outlined above:



g) Go about your daily business and administer points as students work

During the study period one crucially important factor to pay special attention is administering the points students earn. There are a few rules of thumb that have transpired from more than a decade of practical experience that might be considered:

i) As students are building up their results for the study period, it is inevitable that at the beginning of it they will have received points that seemingly don't take them anywhere (e.g. suppose they need to reach 1000 HP to reach level 2 – which might be converted into a D – even though they might have submitted excellent work in the first week, it might only amount to 800 HP … giving them the impression that their work is futile claiming "Great, I have submitted two perfect papers to reach a narrow fail – almost.". Clearly, as the study period goes on, this clears up, however, it might prove quite a mental hurdle for students to overcome at first. Possible solutions include the introduction to a sub-zero level, which means they still haven't reached level 2, yet their progress is fed back to them in the system. Furthermore, by providing students with an opportunity to earn HPs early on in the study period, you might help these fears dissolve.

ii) Nothing to do in the first three weeks and having all the submissions left for the very last moment has a clearly destructive effect on a gamified system of assessment. Leaving any student submissions to the last moment works against the core ideas of gamification. There is no continuous assessment, varied feedback and opportunities for students to choose new learning paths based on the teacher's and their peers' feedback.

iii) If you give students complete freedom as to when they should hand in their work, they will do that at the very last minute – just like most adults would do. It might be wise to set deadlines within the study period. Also, this will help spread out the workload for the teacher, giving them more time to provide meaningful feedback to all students.

iv) By keeping a healthy balance of online and in-class assessment, students will be less likely to cheat. As for online practice quizzes, if they are allowed to try as many times as they like, they will feel less incentivized to learn the answers from their friends in advance. Moreover, by making sure that any online practice becomes an integral part of the next lesson, they will feel that completing these online practice materials is more than just a mere formality.

3 Setting up a point-based system

At the very core of a successful gamified system of assessment is the ability of the teacher to strike a balance between students' needs, desired learning outcomes as well as students' wants. This is more pronouncedly so at first, when students are new to the system and will surely look for ways to try and exploit any shortcomings. As experience has shown, this tendency declines after just 2 or 3 study periods, yet it is well worth considering at the outset. Below is a set practical advice that has been found useful by teachers starting down this road.

a) Provide students with the option to pass

One of the ways to make sure gamification backfires is not including the concept of freedom of choice for students. If, say, one needs 1700 HP to reach the top level ('A'), and they are given points of assessment where completing all tasks perfectly (i.e. 100%) will earn that 1700 HP, the message we are sending is actually one where we say there is no room for mistakes, or even doing sub-par work at any stage of the study period – students are required to perform 100% at all times for all tasks. This, clearly, works against the concept of trying to reduce levels of anxiety for students and will have the opposite effect. Solution: always have at least 1.5 times more points available than students need for an 'A' (e.g. if the top level requires 1700 HP, make sure you provide the chance to get at least 3000 HPs. For an example see the study period in 2 above).

b) Set the cut-off points between levels carefully

Very often, it seems that teachers give less thought than would be needed to how they are going to set the levels of a study period. One typical option is to set them at equal intervals, something like

F = 1000 HP or less

D = 1200 HP

C = 1400 HP

B = 1600 HP

A = 1800 HP or more

This seems not only clear and fair but also easily accessible to students. It is not carved in stone, however, that this needs to be done this way. It should depend on your pedagogical goals. Let me suggest a possible, viable alternative that I have designed with the help of students:

Clear fail: 700 HP or less

D = 1000 HP

C = 1100 HP

B = 1200 HP

A = 1700 HP or more

So, how is this different? First of all, this is not really a scale of five, rather a scale of 3 levels. If you look at the numbers, you realise that in order to go from D to B a student needs to get a mere 200 points, which seems rather simple. If you consider the whole study period, however, it appears that not all students are getting 100% at any one quiz or paper, therefore 200 HPs count and matter more than first meets the eye. If the cut-off points between levels is positioned at equal distances, it proves less of a motivator. In fact, this has helped motivate students lagging behind and has proved to give them a boost when they need it the most.

c) Credit points

One additional feature I have introduced are credit points. There are times in a student's life when things, assignments pile up, making it extremely difficult to juggle all the workload. At times like this, it is a show of faith on my part that students might ask for credit points to be paid back in the next level. There are some important practical considerations to keep in mind to make sure students use rather than abuse this option:

i) carefully consider the reason why credit points are worth the trouble (obviously, it adds a little to the administrative burden to shoulder). In my view, it is an opportunity for students to produce better quality work. That is to say, rather than stay up at night and write a very bad paper from 2 AM till 3 AM, I am willing to give them a chance to do it at a more convenient, with less on their plate. It might be a good idea to let them know this, as it entails that good quality work will be required of them. it is not simply to putt off submitting work, but rather a conscious choice to postpone writing said paper aiming at higher quality.

ii) Credit points are like bank loans. You cannot expect the bank to give you a loan just because you ask for one. You need to prove that you are actually able and willing to pay back. Hence, I state clearly that it is at my discretion whether credit points will be given and I reserve the right to refuse handing out credit points to 'bad debtors'. This is to avoid uncomfortable and embarrassing situations later. In one class students calculated that if they take 1700 credit points for three levels (getting three 'A'a), and let the fourth study period crash (getting an 'F'), they would still get a 'C' and would

have to do nothing. This is clearly abusing the system, therefore teachers should make sure students understand it is not an automatic straightforward procedure.

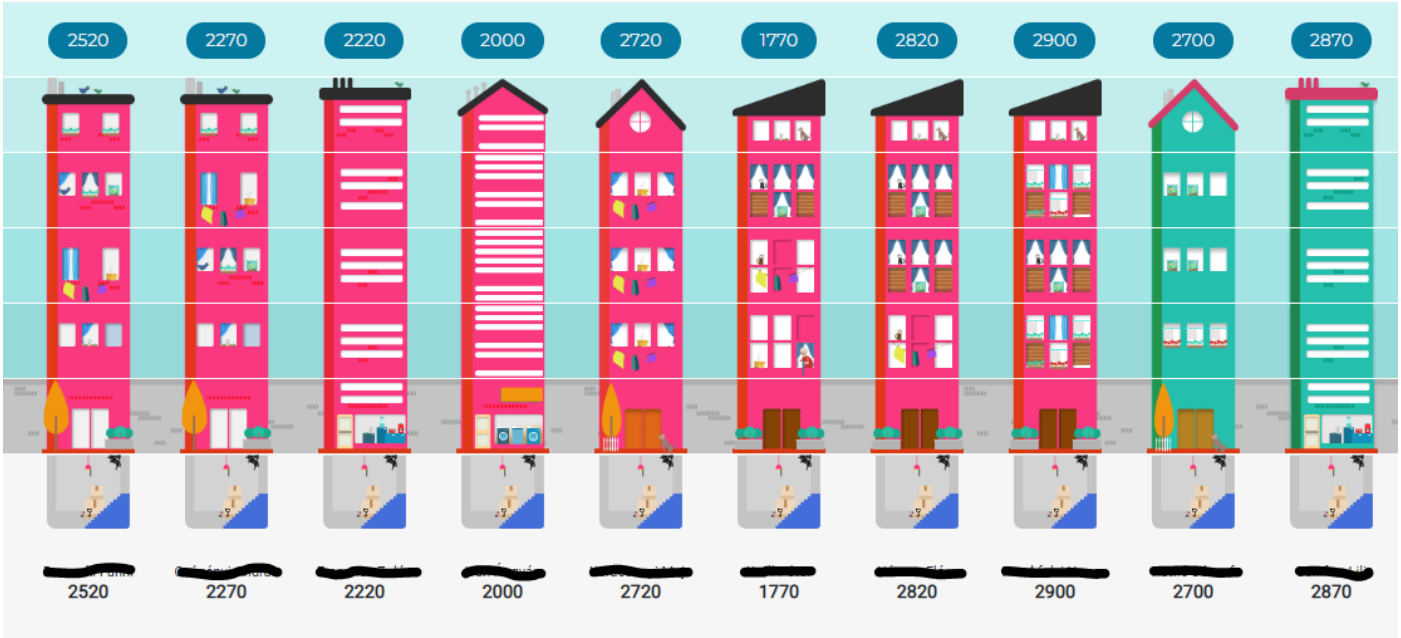
iii) Make sure credit points do not feed procrastinators. There are a few students in every class who would leave things to the last moment, regardless of the topic or the subject. These students prefer to use the institution of credit points to feed their 'procrastination monster', making it simply a way to put off having to do work and leaving it to the next level. These students will always need credit points (as long as you give them some) and use it excuse their attitude. Solution: give them credit once and make sure you are not going to do the same in the next level, whatever the reason.

iv) Students taking out a credit too big enter a debt spiral that might cause them to lose all motivation and fail the course. This is especially true of weaker students who look upon credit points as a way to redeem themselves and get a better mark. For them, paying back is going to be even harder, therefore they will need more credit to sustain their level of achievement, ending in a classic debt spiral. This inevitably results in the student giving up and eventually failing the course. Solution: I have introduced a 'sub-F' level (clear fail), which states anyone achieving less than 700 HPs are not creditworthy, therefore they fail the study period anyway (this might actually be a better solution for students in the long term, as they realise that as student-friendly the system is, you can actually fail if you do not have any input. Over 700 HPs, you might be eligible for credit, however, I usually make sure I discuss with the students their plan to pay me back. With younger students I even have them write it down and see how the extra workload might fit into the next study period's challenges and tasks. This will give them enough guidance.

v) How to deal with overachievers? Clearly, this system favors those who are at the lower end of the motivational scale. Still, it is still crucially important to be able to motivate students who are better or more motivated to achieve more than the bare minimum. In short, how do we make sure good students do not lose interest and are given the opportunity to make the most of the course? Solution: There are quite a few things that have worked to engage highly motivated students. First of all, make them understand that by measuring the added value of education, levelling the playing field, they are not put at a disadvantage. What they see first is that there are students less talented getting just as good marks, which seems unfair to them. Secondly, give them challenges that find intriguing. These are admittedly more difficult than what their weaker peers are doing, yet if you find a way to feed that back into classwork (e.g. giving advanced presentations on the topic in question to the class etc.), they will feel appreciate. A third thing would be

to give them MPs (master points (see section below for a detailed description)

vi) Master points. In order to motivate 'good' students, the institution of master points might come in handy. In the structure described above students should reach 1700 HPs to get an 'A'. As we have already established, to give students the freedom of choice, there should be ideally 1.5 times more points to be earned (app. 3000 HPs in my system). The question arises: what happens to those who have reached 1700 HPs already? How do we prevent them from simply stopping doing any work? Well, the master point system has been developed to answer those queries. What it means is simple: for every level the range of 'A' is 1700-2000 HPs. Now, this might seem pointless, as when we state you need to reach 1700 HPs, it is beside the point how much more you get. However, if you allow students to collect master points, it will make sense. In every level, any point students are awarded beyond the 2000 HP threshold are called master points. The trick is that they are accumulated in some sort of a 'deposit account'. What this means is that students might add any points in later study periods to this account (i.e. if they reached 2200 HPs in study period 1, and 2500 HPs in study period 2, they will have 700 MPs – master points). If they achieve less than 1700 HPs, nothing happens. Master points should not be carried to the next level! This is for the simple reason that just because a student earned more points in arithmetic, they should not be allowed to use these points instead of submitting their algebra paper. Finally, when they reached 1500 MPs over the months, they might 'claim' an extra mark ('A', obviously). For some reason, this system of master point proved sufficient in motivating 'good' students. Below is part of students' result in a 7th grade English class. Please note the number of points reached by the students:



As you can see, most of the students aim higher than the bare minimum they needed to get an 'A'. After a while marks become of secondary importance and they get more focussed on points and the gamification system. Therefore, even though the selective function of marking seems to far less accentuated, students find different sources of motivation to tap into.

4. Traps and pitfalls - how to avoid them

a) Using the system to discipline students

Giving points instead of marks sometimes results in the line between classroom management and academic performance being blurred. This effectively means that teachers tend to use the point system to discipline students, taking off points for misbehaviour or swearing in the classroom. The lure of this trap is that it seems to work at first. Having worked really hard for 500 HPs in a study period, students will feel the weight of minus 200 HPs taken off for inappropriate conduct. As time goes by, however, gamification applied in this manner turns into a system of punishment, and in a relatively short period of time, will be viewed as such by students, who, in turn, will start to actively dismantle gamified assessment. Let's face it, is hard to blame them, since instead of evaluation and formative feedback, they keep receiving negative reinforcement.

An even bigger, larger issue, is the blurring of the line between academic performance and discipline. One has very little to do with the other in terms of marks, points given. One of the first rules in class management is that one should mix these two realms. It is not acceptable to give a student an 'F' for inappropriate behaviour. Similarly, PE teachers are often criticised for using push-ups as a form of punishment instead of it being a great exercise to improve muscle tone. In conclusion, it is wise to keep these two realms separate, make sure you don't involve discipline in your point system and deal with classroom management issues in a different way.

b) Freedom missing from the system - operant conditioning

Gamification was first implemented in sales strategies, well before it found its way into education and assessment. This is no coincidence, since gamification has proved to an excellent means for behaviour manipulation and brand loyalty, i.e. getting people to buy stuff, while also buying into the story of the producer.

By adopting a gamified system (rather than adapting and tailoring to our specific needs and educational context), teachers run the risk of recreating such a system. B.F. Skinner designed a wonderful teaching machine that was based on the concept that if you take any skill or material to be learned and break id down to minute parts, you can teach anyone anything as long as you positively reinforce them if they execute the desired action and negatively if they don't (e.g. if pigeons push a ball across a sort of a ping-pong table with the aim of making it drop at the other end of said table, they get food, if they don't do it, they might get a minor electric shock). It is truly amazing that Skinner managed to teach pigeons to play a kind of table tennis. It is also possible that through a teaching machine, we might make

students study effectively – i.e. learn facts more efficiently. It highly uncertain, however, whether the same pigeons would look at one another on a spring afternoon, with one cooing: "Do you fancy a game of table tennis?". That is to say, that learning without understanding is just about meaningless, especially in the 21st century.

Therefore, when is comes to education, the implementation of any gamified practice needs careful consideration. My experience has been, that the most important difference between the business and the educational context is the concept of freedom. Students must be given the choice to have a say in the learning path they are to take, the opportunity to alter these learning paths based on feedback from their teacher or peers, as well as decide what they need in order to best achieve their goals. That is not to say, of course, that students must be left to their own devices in designing a course, simply to state that their active involvement (with the concept of free choice at time included) does increase their motivation.

c) Micromanaging

Giving students more freedom inevitable results in the teacher feeling less in control of the learning process. To all teachers contemplating this, we might offer some encouragement. 'rest assured, if students are so inclined, you will have no idea what is going on in the classroom anyway'.

One of the toughest shifts in the teacher mindset when it comes to gamification is the idea that students sometimes might choose to do things the teacher would not have suggested they do or might feel not to be productive. In the traditional setting a teacher might be able to 'force' students to engage with a certain type of activity, waving the sword of marking over their heads. With free choice this option ceases to exist. In its place, teachers often choose micromanagement, believing that students' freedom of choice flourishes best under heavy scrutiny. It is a daunting feeling seeing that students sometimes might decide to declie to do what a teacher wishes them to. Still, in the long run it pays off, and it turns out students more often than not do wish to engage with the learning material, given the chance to have a say in how they could do that.

d) Not managing at all

'I have introduced gamification in assessment, I have told students the rules and required them to abide by them. I had to fail 70% of the class' said one teacher. The issue here is with change management. Laying down the law and giving students crystal clear instructions is crucially important but only half of the game. Supporting students during the process is even more important. By leaving them to their own devices at this crucial stage, they ought to feel lost and helpless. This

often results in bad reflexes kicking in (procrastination, leaving everything to the last moment, not being able to manage their learning effectively etc.). if students do not get help as to how to best manage the freedom they are given, the responsibility might prove overwhelming and might result in students freezing. Alternatively, not really understanding what is requited of them might send them in a downward spiral motivation-wise.

What to do? The first tip is to make sure students clearly understand how the system works. Next, make sure you repeat this enough times so that it really sinks in. Secondly, divide the study period and create internal deadlines to make sure students cannot leave everything to the last moment. Also, create a calendar where students can always check what the next steps are in their current study period. Finally, provide enough opportunities for students to gather points at the earlier stages of the study period. This way, they will see that their work bears fruit and will be more in control of the process.

e) Gamification and student burn out

Being somewhat in control of what happens to them has an interesting impact on students' mental state. First, they tend not to believe it, next they realise that they all have a shot at decent results, since the system measures their progress with the baseline being their own knowledge at the outset. this provides everyone with the chance of improvement and success. In other words, you, as the teacher, do not say 'This is the level you are supposed to reach, and you will be marked on the basis of how far you will have reached it', but rather that 'This is where you stand right now, and I expect you to make this much progress by the end of the study period'.

This results in students' heightened sense of achievement, which, in turn, sometimes results in extra motivation for students. They are not assessed based on their absolute knowledge, but rather on their relative development. This is one of the reasons why this system tends to work better in 'not good' schools and is sometimes met with confusion on the part of 'good students'. If everyone gets a chance to improve and you feed back this to students, the pecking order in the class ought to change. The 'bad students' will gain extra momentum and will work much harder to bridge the gap. This seems desirable at first, but experience has shown that it is worth teaching students to exercise moderation. Feeling successful, they will crave more positive feedback, do even more work to get ahead. This is sustainable in the short term, but often results in a mini burn-out in 2 or 3 months. If you see some students work way more than they need and that is not typical of them, slow them down.

5. Applications to use

Gamification softwares abound, however, those that do not intend to provide content, but focus on the learning process are few and far between. Below there are 3 examples that would meet our criteria with a basic assessment of their features.

MotiMore

In this system you can set up classes, invite students, design study periods, manage points, give badges and communicate with them.

ClassCraft

In this tool, you build characters, manage challenges and get immersed in a story. As it is described:

"Teachers set up games and manage students via a dashboard. Students are assigned a character -- Guardian, Healer, or Mage -- and work individually or in groups to gain experience through positive behaviors and academic achievements. Classes progress through Chapters, which introduce new features gradually."

Classdojo

This application is aimed primarily at younger students with some focus on classroom management (behaviour modification). As it is described:

'ClassDojo (opens in new tab) is digital sharing platform that allows teachers to document the day in class and share that with families via a web browser so that nearly any device can access the content.'

6. Gamification and SNE

Special Needs Education is inherently about differentiated instruction. Accepting the fact that students' develop at a different pace and in different learning paths, gamification might provide an excellent framework for the administration of student progress – giving the opportunity to see each student as a different entity, yet providing a framework that allows students and parents to trace their progress.

Looking into the research done in this area, it clearly transpires that the transformative power of games and gaming is accentuated with respect to SNE, that is to say, game-based learning has a wider appeal as it shifts students' focus from learning and having to pay attention to facts and concepts they might feel somewhat alienated from, to playing, which is an activity inherently embraced by all children and youth. Therefore, the use of games and game-based learning is documented for SNE students, yet, it might be worth exploring how a gamified system of feedback and