

## Motivation in alternate reality gaming environments and implications for learning

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**Abstract:** Alternate Reality Games are being used increasingly in Higher Education as a way of providing a stimulating context for student learning. However, several instances have shown that students are not as motivated to take part in this type of active learning activity as might be imagined. This paper draws on four case studies of the use of learning activities inspired by alternate reality games to examine what can be learned about student motivation, and how this could be used to influence student engagement in learning.

Alternate Reality Games combine an unfolding narrative with puzzles that are solved by a collaborative community, both online and in the real world. They offer the opportunity to create engaging problem-based learning experiences in which students can work together to discover secrets and solve mysteries. Some players become highly engrossed in these games to the extent that they put large amounts of effort into solving challenges or creating artefacts to further the game. In the context of education, however, while high levels of engagement are seen in some students, it is certainly not universal.

This paper explores the literature on motivation with games and learning, drawing on evidence from problem-solving research and collaborative gaming communities, and presents a model for understanding motivation with Alternate Reality Games as a distinct genre. The paper then uses four case studies to explore different ways in which motivation can be facilitated in educational ARGs (and activities inspired by the ARG model). The Never Ending Uni Quiz at the University of Brighton, and Viola Quest which ran at Manchester Metropolitan University, are examples of games designed to support induction. The Great History Conundrum at the University of Leicester used some ARG aspects to create an online problem-solving course to teach Historical research skills. Operation Sleeper Cell was the first charity ARG and was developed to raise funds for Cancer Research UK, providing a comparative study from a related sector. Each of these cases are described and lessons learned with respect to motivation highlighted.

Finally, the paper explores the issues raised in the case studies. In particular: the influence of competition; designing appropriate levels of challenge for motivation; the implications of increasing participation levels; assessment; and ways of supporting autonomy. In all, this paper hopes to provide an insight into what can be learned about motivation from alternate reality games.

**Keywords:** alternate reality games, motivation, engagement

### 1. Introduction

In recent years, the phenomenon of *Alternate Reality Games* (also known as pervasive or immersive online games) has spread across the film, media and charity sectors (both grassroots and with major commercial backing). More recently it has been tapped by Higher Education, where course designers are keen to replicate the high levels of engagement and turn it into a desire for learning.

Alternate reality Games (ARGs) combine an unfolding narrative with puzzles that are solved by a collaborative community, both online and in the real world. They offer the opportunity to create engaging problem-based learning experiences in which students can work together to discover secrets, solve mysteries and compete for prizes. Some players become highly engrossed in these games (Moseley (2008) found that players of one popular game were spending 1–2 hours each day on the game as a positive lifestyle choice), spending time collaborating, researching, problem solving and creating materials to further their progress in the game. As will be explored below, it is these elements that have attracted a growing number of tutors or course designers to bring the genre into the education sector.

In the educational context, however, ARGs enjoy mixed success. While high levels of engagement are seen in many students, this is certainly not universal – indeed, some students fail to engage at all. This paper examines four case studies where a learning environment has been inspired by or designed around alternate reality game concepts (two in the form of complete ARGs, two utilising particular key features) to explore the motivating (and demotivating) factors and to determine which features or approaches are best placed to improve widespread student engagement with learning.

## **2. ARGs for learning**

As well as being engaging and motivational to many people, Alternate Reality Games offer a great potential for learning. The elements that comprise this type of game relate to a number of contemporary pedagogic theories. For example, they can be considered to be constructivist learning environments in that they meet three precepts of constructivism (Savery & Duffy 1995): they involve individuals constructing their own understandings of the game environment; they provide a stimulus for puzzle solving and a goal for learning; and they support social collaboration.

There are also clear links with educational theories such as problem-based learning (Boud & Feletti 1991) and experiential learning (Kolb 1984). By actively engaging in the game and working together to solve challenges and piece together the storyline, the players solve authentic problems in context and directly experience what it is like to be part of a mystery as it unfolds. A common criticism of games for learning is that they do not integrate scope and space for reflection; the more paced-out nature of ARGs, coupled with their collaborative nature, provide time and space in which the players can reflect with others on the challenges involved.

Other features of ARGs make them compelling for higher education, not least the high levels of motivation and prolonged engagement shown by some participants. In Moseley's (2008) study of the most engaged players of the *Perplex City* commercial ARG, he found that the key motivating elements included competitive elements (the desire to rise up the game's leader board and compete for the grand prize), the regular delivery of new challenges, the narrative element, and communal aspects (collective solving and discussion on official and unofficial forums).

This strong collaborative aspect is also of interest to education – with players working together in teams or en masse to solve difficult or geographically/intellectually widespread problems: in an early ARG, *I Love Bees*, players across the world managed to answer a series of pay phone calls spaced four minutes apart, and relay a message on each occasion. McGonigal (2008) investigated this 'collective intelligence' phenomena, noting that "massively distributed puzzle pieces were tracked down and documented by individuals, but compiled and analyzed by the group" (p206). The collective also provide support to new players outside of official game channels, developing, in Wenger's (1998) terms, "a local regime of competence" (p184) and a sharing of "stories, explanations [and] descriptions" (p185): ARGs build up a very strong *community of practice* around themselves.

A further, not inconsiderate, factor is the technical requirement to host an ARG-type game: in contrast to other online immersive environments such as *Second Life* or massive multiplayer games like *World of Warcraft*, ARGs can – and have – existed simply with a few basic web pages and some scraps of paper. Their technical basis can be as small or complex as the budget or gameplay require.

In his study of *Perplex City* players, Moseley (2008) found seven key ARG features which might be useful in higher education contexts to bring some of the high levels of motivation and engagement:

- problem solving at various levels;
- progress through the game and rewards (players were rewarded with gifts for solving a certain number of puzzles, for submitting the best video, and so on);
- narrative element (story/plot);
- regular delivery of new challenges;
- large active community;
- influence the players had on the game outcomes (in an ARG there is often no fixed path or ending; the designers respond to the players' actions to develop the story line beyond a core skeleton);
- independence from any particular technology.

### **2.1 ARGs and Motivation**

Some of the seminal research in games and motivation was carried out by Malone (1980) and Malone and Lepper (1987), who identified four aspects of computer games that they considered to be motivational (albeit with a sample of children). These are: challenge of an appropriate difficulty with clear and achievable goals, a compelling fantasy environment, curiosity and mystery, and being able to control the environment. It is clear that ARGs have the potential to easily encompass all of these motivational elements, however they can also be considered as a distinct genre with their own motivation factors. Whitton (2009) describes six motivational elements of ARGs, saying that, while each of these elements are not mutually exclusive, each factor will motivate different players to different extents.

- Completion – being able to complete the game and achieve all the tasks or challenges.
- Competition – by competing against others and winning prizes or moving up a leader board.
- Narrative – discovering what is happening in ongoing story as it emerges.
- Puzzle-solving – the ongoing puzzles, riddles and challenges.
- Community – collaborative elements, discussion boards and completing challenges with others in the real world.
- Creativity – an opportunity for players to be creative, either through problem-solving or the development of game artefacts.

As well as the motivational factors of games, there are also characteristics present in ARGs which players may find *demotivational*. In research about demotivational factors regarding games in general, Whitton (2007) describes that four key factors: difficulty in getting started without having to spend too much time setting up and learning rules and etiquette; getting stuck at a point in the game and being unable to see a path forward; lack of trust in the game system or perceived unfairness of the game; and an intrinsic lack of interest in the game or subject matter itself. This last point is particularly interesting as it opposes the argument that anything can be made fun if it is made into a game (e.g. Prensky 2001).

### **3. Case studies**

These four case studies explore different ways in which motivation can be facilitated in alternate-reality-based games. *Viola Quest* was a full ARG that was run at Manchester

Metropolitan University to support student induction. The *Great History Conundrum* at the University of Leicester used some ARG aspects to create an online problem-solving course to teach Historical research skills, while the *Never Ending Uni Quiz* at the University of Brighton used several similar techniques to support student motivation and engagement during induction. Operation Sleeper Cell provides a comparative study from a related sector, and was the first charity ARG, developed to raise funds for Cancer Research UK.

### **3.1 Viola Quest**

*Viola Quest* was an alternate reality game developed as part of the JISC-funded ARGOSI (Alternate Reality Games for Orientation, Socialisation and Induction) project, which ran between September and December 2008 at Manchester Metropolitan University. The game was designed to complement traditional student induction and provide a way for students to get to know the city and meet new people. In addition, it was designed so that the challenges encountered would match the set of introductory information literacy learning outcomes covered in the University's standard library induction.

The plot centred around a first year student, Viola Procter, and a mysterious map piece and letter she had discovered, which described a secret society and a hidden machine. As the game unfolded, the players worked together to find a complete map, which led them to the location of the machine and to uncover its purpose. The challenges they encountered included a variety of individual and collaborative puzzles, taking place both online and in the real world. The game made use of a bespoke game engine that delivered and assessed challenges (either automatically or by hand), allowed users to set up profiles and see how they were progressing relative to others, and offered a means of group and individual communication. The game also made use of external web resources including web sites, blogs, social networking and video hosting sites.

The game was designed to address all of the motivational factors identified (and described in section 2.1 of this paper). The competition motivation was facilitated by making it clear that a set number of challenges needed to be completed and this was heightened by linking challenges to collecting map pieces. Competition was fostered by implementing a leader board so players could see how they were progressing compared to others. The ongoing narrative and community were both integral to the game play and the challenges (although predominately based around puzzle-solving) also contained creative tasks.

Despite a fairly comprehensive marketing strategy (involving distribution of thousands of postcards, posters, stickers and leaflets, as well as publicity via student magazines, radio, email and the University Virtual Learning Environment) the take up overall was relatively small with only 173 players in total, and only 23 who were engaged in the game beyond initial sign-up. There were a small number (3% overall) who showed extremely high engagement and motivation. Market research indicated that starting the game during the first week of term (when students are typically already overwhelmed) had contributed to the poor take up, as well as the cryptic nature of the publicity materials. Students said that they would have been more keen to take part if the marketing had made it more explicit that this was a game, and it was clear what steps they were expected to take, although many said that they did not have time to play 'a game' but would be more interested in taking part if they had realised that it would benefit their studies or there was external motivation such as a prize. Feedback also showed that many players found the first challenge too difficult, or did not see the value of spending time and energy on it, and so simply gave up at that point.

### **3.2 The Great History Conundrum**

At the University of Leicester, there was a need within a first-year undergraduate History module to improve student take-up of, and engagement with, the critical analysis and filtering of internet-based historical resources. Looking for models of high engagement and collaboration that would work in an online/blended context, the course designer used some

of the key features offered by alternate reality games to create a four-week-long activity based in problem solving, collaboration and competitive play. Rather than a fully-fledged ARG, the project took some elements (in terms of the motivating factors identified above, these were: graded puzzle solving, competition involving leader boards and prizes, minor narrative/story elements, and community/collaboration aspects) and combined them with subject-specific and research skills elements already used in the original course, all embedded in the University's Virtual Learning Environment.

Over a four week online course, book-ended by a face-to-face introduction and prize giving, students were provided with a number of puzzles of varying difficulty, which could be solved at any time of day or night, and would be immediately marked on a leader board, and replaced with new puzzles to solve via email (the instant reward and delivery of new problems thought to be key to maintaining engagement). The puzzles were graded and also covered different cognitive skills (searching, selection, filtering, criticism and application) to ensure inclusion across the large cohort (200 students). Collaboration was encouraged through the use of a 'swapping' element (students trading puzzles with their peers), discussion forums and the construction of a collective wiki (a resource the students will be able to use throughout the rest of their degree). Carefully constructed assessment criteria were developed to encourage and assess engagement with the activity and concepts (with marks directly linked to each solution and discussion post; higher marks awarded for higher levels of understanding or critical reflection).

The first indication that engagement levels had risen was shown in the access statistics to the discussion forums and puzzle marking system: many working long into the night, and spending 1–3 hours a day online. Additionally, the assessment results revealed pass rates similar to the previous year, but the standard of pass was significantly higher (half achieving over 60%, or a 2:1). A voluntary subset of students questioned after the course rated the following features as most motivating (highest first): getting a good assessment score, solving and getting new puzzles, seeing themselves rise up the leader board, and aiming for one of the prizes. Initial anecdotal evidence from tutors of follow-on courses revealed that these students are a highly engaged, highly performing cohort with increased critical understanding of key concepts, when compared to previous years.

There were, though, two key demotivating factors that were revealed during the course and in the follow-up questionnaires. First, the 'swapping' system for puzzles meant that some students were waiting for one or more days before they could solve a new puzzle: this they complained about at length (and was, quite simply, a block to engagement); second, the final stage of the course, where groups of students created a shared wiki resource, received a number of complaints from both high and low performing students. The main issues were lack of clarity/instruction in how to approach a group writing task, and the unfair aspect of higher performing students 'carrying' the lower ones (a common feature of group work – as noted by Kaufman and Felder 2000, among others). Of these two demotivating factors, the latter is a result of traditional group work issues; whereas the first is an indication that a regular and unhindered delivery of new puzzles/challenges is indeed a strong motivating factor.

### **3.3 The Never Ending Uni Quiz**

Several induction ARGs had been run at the University of Brighton in previous years, with strong motivation shown from players but low overall take-up from the student population as a whole. The *Never Ending Uni Quiz* project was designed as a way to encourage more students to engage with an induction game, by making it clear what was expected of the players and giving very clear feedback about how a player was progressing. Social games outside Higher Education, such as those played on Facebook, were studied and concepts were adapted to produce a workable game in a University context.

The Never Ending Uni Quiz is an online quiz, aimed primarily at new students to help increase awareness of University services and support. Launched in June 2008, the quiz has had well over 1500 active players, and new members are still joining daily. Applicants, who were due to start at the University in September, were able to play the quiz before arrival, learn about the University and to start to feel a sense of belonging.

In their own words, the students have this to say about the quiz:

“I have found it informative about the University and have found out things I would not have otherwise known.”

“I like quizzes and think it is a fun way to learn about Uni.”

“The fact that the quiz was everything to do with the University, and I was a first year student eager to know more about the university especially because at the time I started the quiz, I had not yet started University.”

The quiz questions are continually updated and added to from staff across the university – including questions on the Senior Management Team, campus maps, parking arrangements and the local towns.

In terms of motivation for players, one of the fundamental elements of the quiz is a leader board, putting all the players into teams based on their level and campus. This added element of competition – between teams and also between individual players – has been identified as the key to the strong engagement observed. Initial analysis of players' behaviours, and feedback, shows bursts of intense activity, often playing for over an hour in a session until a target (e.g. top of the leader board for their team) is achieved. The model of attaching a leader board to a 'standard' activity, such as an online multiple choice quiz, seems to transform the activity into something substantially more motivating to players than without (see Piatt 2009).

It was observed that once targets had been reached players rarely returned continuously to play the quiz again. The lack of story or any significant collaborative elements to augment puzzle solving, no doubt contributed to this, and the absence of these became demotivational.

### **3.4 Operation: Sleeper Cell**

*Operation: Sleeper Cell* was an alternate reality game that ran for ten weeks in late 2008 with the aim of raising money and awareness for Cancer Research UK. The game had a spoof spy theme and consisted of three main parts:

1. A series of missions – puzzles, challenges and creative tasks.
2. An unfolding story told via the blogs of the game's characters.
3. A larger 'metapuzzle' based on clues unlocked by completing missions.

Players could play individually or in teams. New missions were released at intervals during the game and could be unlocked via a donation to the charity. The donation unlocked the mission for all players of the game, with the team or player sponsoring the mission received a head start over other players. Points were available for completing missions and there were both team and individual leader boards. A full description of the game can be found in Law 37 (2009a) and the game website can be accessed at [www.operationsleepercell.com](http://www.operationsleepercell.com).

There were approximately 40 active players engaging with the game for its full duration (see Law 37 (2009b) for detailed statistics). For a subset of these players, the competitive element was a major driver, with one team in particular going to great lengths to ensure that

they stayed top of the leader board. This team also started a mini-fundraising contest between teams at one point during the game.

Overall, the quality and variety of puzzles was constantly cited as a reason for playing the game. The fact that the game was 'for charity' also featured. For example, one player noted "Put it this way; I wouldn't have likely paid to take part if it wasn't for charity; I wouldn't have pushed other people into playing quite so much as I did if it hadn't been for charity". The social element is harder to gauge – most of the more active players were members of teams, however the majority of teams were formed by people who already knew each other, despite the in-game forums provided for the players. Some players commented that they might have played more if they had known other people who were playing with whom to form a team.

The story and game universe certainly engaged many players, as witnessed by the comments of players, forum posts and entries to some of the creative missions and forum posts. The attention to detail and humour in the game were stated as being significant factors. Although for other players the story and theme was less important, for instance, one player said "I don't think it made any difference to me – there were just lots of quality puzzles, and that's all that mattered from my point of view".

In terms of demotivators, a few main themes came up. Fairness of marking of the non-puzzle missions was a sensitive point with many players. At one point in the game, one of the players posted a complaint on the forums about the way that the puzzles had been marked, with other players weighing in on the topic. As a result the marking process was made much more transparent, but there were still mild complaints later on in the game. Several players also brought up issues with the pacing of the game – either not having anything new to do for long periods of time, or mentioning that the pace towards the end was too fast, with too much to solve in too little time. People who stopped playing part-way through the game generally gave reasons revolving around not having enough time due to other events in their lives or being stuck on puzzles that were too difficult (although other players mentioned that they found the forums useful for hints when they were stuck on puzzles). Similar reasons were stated by people who viewed the game website but did not play the game.

#### **4. Discussion**

From an examination of these four case studies, there are a number of issues that commonly arise when considering the design and implementation of alternate-reality-based learning games, and these can be addressed in a number of different ways. There are five areas in particular that the studies have highlighted for discussion: the impact of competition; how to design appropriate challenge for motivation; levels of participation; assessment; and ways of building autonomy. The following five sub-sections briefly discuss each of these issues in turn.

##### **4.1 Competition**

The degree to which competition is embedded within any game format is an issue in education as, while many students find it motivating, others find it demotivational and off-putting. Ensuring that there is a good balance between competitive and other elements is important to ensure that the game is engaging to as many students as possible, as is designing the game in such a way that the competitive element is obvious but not obtrusive. Ways in which competition can be implemented include tangible artefacts such as prizes or intangible elements such as leader boards showing a player's position relative to others. Elements of competition can help to keep players engaged in the game but can also lead to negative effects such as demotivation when losing, and players focusing on what needs to be done to win the game (even through cheating) rather than learning from it.

In *Viola Quest*, a leader board was implemented but this did not seem to have a great motivational effect on most of the people who took part; however, feedback from market

research showed that students wanted a definite and clear rationale for taking part (prizes were mentioned but seemed to be less motivational than being aware of an obvious benefit to their studies). The *Never Ending Uni Quiz* did not offer prizes, but there appeared to be sufficient motivation for players to climb to the top of the leader board – and stay there – without needing to have a monetary prize. The *Great History Conundrum* showed prizes to be a good motivating factor, but less so than the leader board itself (which was linked to both assessment and prizes).

#### **4.2 Motivation**

Ensuring that students are motivated to play the game in the first place, and continue to engage in it, is crucial. Having a reason for taking part, whether it is because it is compulsory, assessed or simply promoted as 'a good way to learn' is essential. Feedback from market research with students at Manchester Metropolitan University showed that they did not want to take part in something that was too cryptic (i.e. meeting the ARG aesthetic of 'this is not a game') because they did not know what the game was about (or even that it was a game) and could not see any value in taking part.

There are a variety of other ways to draw students into the game and keep them motivated, including developing involvement with story and its characters, a mystery that unfolds and stimulates curiosity, and ways in which they can demonstrate their creativity by developing artefacts or working collaboratively to add to an ongoing storyline. Ensuring an appropriate level of challenge is also key, and providing a variety of challenges at progressively different levels and of different types helps to ensure that there will be puzzles at the right level to engage students of different abilities and preferences. In addition, a variety of ways to support students when they get stuck – such as hints, clues or community forums – provide a way to avoid demotivation. Avoiding getting stuck is about the players knowing what is expected of them as well as actually being able to complete the puzzles or challenges, so clear and explicit instructions are crucial. Ensuring that the game is seen as fair and open by the players is also very important as this can be an aspect that stops people engaging with the game, so scoring and the relationship between scores and evaluation of answers (particularly when a competitive mechanism such as a leader board is used) should be explicit.

#### **4.3 Participation**

In the ARG case studies above where there was a genuine choice to play (i.e. they were not related to course assessment), relatively small take-up was observed compared to the available audience. What is interesting in these cases is that the players who did chose to play were hugely engaged with the game, but formed a niche audience without mainstream appeal. The comparison of player statistics from *The Never Ending Uni Quiz* with these optional ARGs shows a marked difference. Rather than a niche audience, player figures within an institution were in the thousands – not the tens. Fewer demotivational factors recognised above are present in something like a quiz, compared to a more challenging ARG. Players of a quiz are always very clear on what is expected of them – no curiosity about solving a mystery is required, and therefore players are less likely to be stuck, confused and unable to make a start. However continued motivation, or engagement with a quiz in the long term, is a lot lower than for an ARG because of the missing elements of story, puzzles and creativity. It seems one can achieve high participation with low continued engagement or low participation with high ongoing engagement by selecting particular motivational factors.

#### **4.4 Assessment**

Assessment has always been a hot topic in higher education, and never more so than now. Antiquated forms of assessment geared towards final papers and the tutor-marked 100% scale are coming under scrutiny for their inability to test new forms of learning within new flexible delivery methods either effectively or efficiently (see reports by TLRP (2008) and

JISC (2007)). Reeves (2000), in noting this, suggests that new forms of assessment need to be developed to align them with new learning outcomes desired and expected from online learning methodologies.

Problem solving and group work have, in turn, been equally difficult to assess effectively (discussed, with several solutions for the pre-online age, by Angelo and Cross (1993)). Coupled with the dim view many institutions and indeed students have with regard to game-related activities (viewing them as – variously – unacademic, frivolous, or time-wasting), this has caused many designers to take games out of the formal curriculum into induction or as extra-curricular opportunities (as is the case with three of the case studies in this paper).

But with these difficulties come great potential benefits. There is no greater motivator for many students than gaining a high or pass grade, or knowing that their work is going directly towards their overall qualification. Assessment can therefore aid motivation with other areas of a course – where those areas and the assessment are aligned. There is therefore great potential in formally assessing game-related elements and therefore bringing them into the curriculum: aside from motivation aspects, this inclusion guarantees high student participation and also gives the elements gravity in academic terms.

In the one case study where assessment was embedded in this way (the *Great History Conundrum*) much time was spent developing solid assessment methods and criteria that were aligned closely and visibly with the course materials (linked directly to the leader board for example), and which would give the course weight within the academic department. The benefits were significant, but countered by the time and thought needed to align and design the assessment; the fact that students felt that they had grounds for complaint and unfairness; and (for those who failed the course) the need to develop re-sit and review procedures.

#### **4.5 Autonomy**

Problem solving by its very nature is both autonomous (developing own strategies and awareness of issues in own time) and collective (drawing on strengths and experiences of others in a group to build new meanings), but what sets ARGs aside from more traditional academic problem solving activity is both the potential for independent, autonomous investigation; and the willingness of the game community to take on board many of the support and development aspects we would normally have to provide as designers. Moseley (2008) found that peer support within Perplex City was extremely efficient: experienced players helping newcomers to cope with the game mechanics, technical issues, and to work through problem-solving steps (“I’d usually point new players to resources to catch up, as well as write tutorials” one player explained.) This level of scaffolding (Wenger 1998) and support links directly to student motivation – either to develop their own skills and competences to show off to, or gain membership of, the group; or share in the joint motivation of a group moving forward together.

The issue of quality arises in academia when students are learning autonomously. Lewis and Vizcarro (1998) note that there is a conflict between a wish to push students into being autonomous coupled with a necessity to provide adequate guidance. The intervention, at some stage, of a trusted academic source or advisor is therefore seen as essential to guide autonomous learning down the right track. This could be programmed in to the content (as with the *Never Ending Uni Quiz*) or delivered through moderated discussion (as performed in the *Great History Conundrum* by postgraduates).

#### **5. Conclusions**

In conclusion, it is clear that designing an appropriate alternate reality game -based learning experience is neither easy nor formulaic. The right balance of motivational factors will depend on the student group, the nature of the subject matter and learning outcomes, the

skills and preferences of academic staff, the environment in which the game is played, and a variety of other factors.

One observation that can be made from an analysis of these four case studies is that creating a motivating, engaging game may be less about providing a range of motivating factors (although this is still important) and more about ensuring that there is a clear rationale for students to engage with the game (be it intrinsic or extrinsic) plus – crucially – a lack of *demotivating* factors. By ensuring that games have a range of elements, including (but not necessarily all of) competition, something to complete, puzzles, narrative, creativity and community; are designed in a way that allows easy initial take-up and participation; include ways to avoid getting stuck; and are seen as being fair, then the chances of creating an environment in which students will be engaged and autonomous will be greatest.

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