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Rethinking education as experience design

Abstract:

Internationally recognised creativity expert Sir Ken Robinson (2011) has argued that there is an urgent need to transform education systems around the world in view of today's social, economic and environmental challenges. The current system of mass education that arose from the demands of the Industrial Revolution places unnecessary limitations on the creative capacities of today's students, he claims. New conceptions of intelligence, creativity and human ability are needed. One way of contributing to that transformation might be to rethink education in terms of experience design – an emerging cross-disciplinary field of research and practice that is concerned with designing products, services, processes, events and environments with a focus on the quality of human experience. This article discusses selected theories and principles from the field of experience design, and considers how they can be applied to learning experiences, both face-to-face and online.

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Keywords:

creativity – experience design – education – optimal experience

Introduction

Experience design is an emerging cross-disciplinary field of research and practice that is concerned with designing products, services, processes, events and environments with a focus on the quality of human experience (Benyon 2010: 97-114, Shedroff 2001). In a business environment, for example, experience design might involve managing points of interaction between consumers and brands, particularly the meanings, emotions and memories that those interactions create for consumers (Diller, Shedroff & Rhea 2005: 19). These so-called 'touchpoints' for a given business might include its products and services, advertisements, web sites, customer service, physical premises, and any number of other factors that contribute to a customer's experience. In this commercial context, the aim of experience design is to orchestrate consumer experiences that are not only functional and purposeful, but also engaging, enjoyable and memorable. To illustrate this concept, consider The Forum Shops at Caesar's Palace, Las Vegas – a 59,000-square-metre luxury shopping mall that recreates the streets of ancient Rome for the pleasure of visitors. The Forum Shops' elaborate Roman motif is conveyed through features such as intricately crafted marble facades, ornate columns, beautiful fountains, a ceiling that is painted and lit to simulate a changing sky, and animatronic statues of Roman gods that come to life each hour to put on a show for shoppers. The experiences offered by The Forum Shops have made it one of the most popular shopping destinations in Las Vegas, leading to the highest sales per square foot ($1,400 USD) of any shopping mall in the United States (Moore 2011).

One of the basic tenets of experience design is that 'the elements that contribute to superior experiences are knowable and reproducible, which makes them designable' (Shedroff 2001: 2). Note that it is the contributing elements that are designable, not the experiences themselves. Experiences are inherently personal, subjective phenomena. No two people can have the same experience. Consequently, experience design is about designing *for* human experiences, that is, designing 'the scaffolding or infrastructure that people can use to create their own experiences' (Sanders 2001). To illustrate, not all consumers will react favourably to the experiences offered by The Forum Shops, but the remarkable sales figures quoted earlier suggest that a significant proportion of the population will.

Shedroff describes experience design as simultaneously having no history (since it is a nascent discipline) and the longest history (since it is a combination of multiple disciplines stretching back to ancient times) (2001: 2). Experience design draws from a diverse range of traditional, established disciplines such as storytelling, theatre, architecture, psychology, interior design, communication, graphic design, human-computer interaction, game design, and more. The collection of contributing disciplines is large enough to defy formal definition. Applications of experience design can be found in areas such as retail stores, restaurants, museums, live performances, films, television programs, software and theme parks, to mention just a few.

Experience design does not always involve an artificial, escapist element, as in the case of the aforementioned Forum Shops. An example of benefits arising from

experience design in a more grounded setting can be seen in the story of the Apple iPod. In 2001, digital music players were much less sophisticated than the devices we see today. Kahney described them as being 'either big and clunky or small and useless' (2006). Most digital music players of that era had a relatively small memory chips capable of storing only a few dozen songs. Then in October 2001, Apple unveiled the iPod, a portable media player weighing just 120 grams and capable of storing about a thousand songs on its tiny internal drive. In a short period of time the iPod dominated digital music player sales in the United States, and it continues to do so today with approximately 78 per cent of market share (Albanesius 2011). The key to the iPod's success, like the iPhone and iPad that followed, was the seamless end-to-end experience it offered to users – a stark contrast to the comparatively clumsy experiences offered by rival products. iPod users had to install Apple's iTunes software on their computers and download content from Apple's iTunes Store. The tight integration of hardware, software and content into one unified system enabled a degree of simplicity and usability that competitors could not match. According to Isaacson, deceased former CEO Steve Jobs 'always wanted Apple to create its own unified utopia, a magical walled garden where hardware and software and peripheral devices worked well together to create a great experience' (2011: 405). This focus on creating great experiences paid off handsomely. In May 2010, Apple surpassed Microsoft as the world's most valuable technology company and its fortunes continue to grow (Isaacson 2011: 562).

If experience design can bring benefits to fields as diverse as retail and digital technology, does it hold any promise for education? Internationally recognised creativity expert Sir Ken Robinson has argued that there is an urgent need to transform education systems around the world in view of today's social, economic and environmental challenges (2011). The current system of mass education that arose from the demands of the Industrial Revolution places unnecessary limitations on the creative capacities of today's students, he claims. New conceptions of intelligence, creativity and human ability are needed. If Robinson's concerns are justified – and many educators believe they are (see, Craft 2005, Jackson et al 2006, Starko 2010) – then rethinking education in terms of experience design might be one way of contributing to that transformation. With that aim in mind, this article discusses selected theories and principles from the field of experience design, and considers how they can be applied to learning experiences, both face-to-face and online. Although this discussion has particular relevance to creative arts education, it is not limited to that discipline. As Robinson notes, 'Creativity is not only about the arts … Creativity is possible in every discipline and should be promoted throughout the whole of education' (2011: 257-58).

The investigative approach that this article will take is described by Montuori as 'creative inquiry' – a type of literature review in which 'the knower is an active participant constructing an interpretation of the community and its discourse' (2005: 375), rather than a mere bystander who attempts to reproduce the relevant authors and works. Creative inquiry views the literature review as 'a construction and a creation that emerges out of the dialogue between the reviewer and the field' (Montuori 2005:

375). In other words, it is a creative process that involves active construction of knowledge by the reviewer. Rather than simply summarising the work of others, creative inquiry involves interpreting it and situating it within the context of the field of study. This type of literature review is not exhaustive; it selectively highlights some areas at the expense of others, depending on the theoretical positions that need to be addressed. It may also recognise multiple cross-disciplinary perspectives rather than stay within the confines of a single discipline. Montuori contrasts creative inquiry with another style of literature review that he terms 'reproductive inquiry' – a simple enumeration of 'who said what' or a regurgitation of names and ideas (2005: 374).

Education is theatre

The first principle of experience design that will be considered in this section is the notion that education is theatre. The use of theatre as a metaphor or model is a recurring theme in the literature about experience design. *Computers as Theatre* by Laurel (1993) and *The Experience Economy* by Pine and Gilmore (2011) are two examples of publications that take this approach. Laurel's book uses theatre as a model to conceptualise human-computer interaction and to suggest new approaches to interaction design. Pine and Gilmore's book uses theatre as a model for work in an 'experience economy' where enterprises stage experiences as a form of economic output that is distinct from commodities, goods and services. This section will explain why the model of theatre is equally applicable to experience design in education.

Pine and Gilmore argue that 'work is theatre' in the sense that anyone who carries on business – executives, managers, employees and others – is engaged in a performance for an audience of customers (2011: 156-57). Understanding this point brings new meaning to commonly-used business terms that are shared with the performing art – words such as *production*, *performance*, *role* and *scenario*, to mention a few. Accepting the notion that work is theatre can help people to think differently about their work and to engage customers in a more memorable way. The Walt Disney Company exemplifies this idea through the operation of its theme parks such as Disneyland and Walt Disney World. Disney theme park staff consistently use theatrical terminology to reinforce the idea that their work is a performance. Visitors are referred to as *guests* and park employees are referred to as *cast members*. Each cast member's job is called a *role* and their regular work attire is called a *costume*. Any area of the park that is accessible to guests is referred to as *on-stage*, and any area that is closed to guests is referred to as *backstage*. The on-stage appearance and behaviour of cast members is governed by a set of guidelines or a *script.* For example, cast members are very aware that their stage is a fantasy world where negative aspects of everyday life do not exist. Consequently their interactions with guests are always expected to be friendly, courteous and helpful (Bryman 1995: 84-88, Sangiorgi 2009: 41-52).

If work is theatre in the sense that Pine and Gilmore (2011) suggest, then by the same line of reasoning, education is theatre too. Teachers, like actors, perform for an audience of students. Teachers prepare for their role, analyse past performances and

constantly adjust the way they go about their craft, just as actors do. When teachers view their work as theatre, they gain benefits such as becoming more conscious of what makes a learning experience engaging and memorable for their audience. To illustrate this point, consider the Mask-Ed (KRS Simulation) technique that was developed by Kerry Reid-Searl, an Associate Professor in the School of Nursing at Central Queensland University. As part of her teaching, Reid-Searl engages in role-play activities with her nursing students to prepare them for the reality of clinical practice. She plays the role of a patient with a history that is relevant to the learning experience, and her students play the role of nurses attending to the patient. Reid-Searl convincingly adopts the mannerisms and personality of her characters such as 76-year-old retired butcher Cyril Smith. To enhance her characterisation, she wears a costume, which includes a very lifelike silicone face mask and possibly other prosthetic pieces such as a torso, arms or legs. Some of these high-fidelity prosthetics incorporate realistic wounds, a stoma, ulcers, secretions and even adjustable pulse rates. The patient character Cyril Smith has an extensive knowledge of first aid, allowing him to serve as a platform for teaching. Studies have shown that students find these role-play activities remarkably realistic, educational and engaging (Reid-Searl et al. 2011). The realism of the scenarios has helped students to improve their skills in clinical care and communication. It has also helped them to increase their confidence and overcome their fears of working with real patients in a clinical environment. The Mask-Ed system has been adopted by universities throughout Australia and overseas, and Reid-Searl's work has been recognised by numerous awards, including a Citation for Outstanding Contributions to Student Learning from the Australian Learning and Teaching Council.

Mask-Ed is a prime example of education as theatre, but teachers don't have to engage in role-play or wear costumes to apply this principle of experience design to their practice. Simply viewing their work as a performance can help teachers to enhance the learning experiences they stage in small but meaningful ways. Adopting an experience-directed mindset encourages teachers to think about what should occur on stage and what should be relegated to off-stage activities (Pine & Gilmore 2011: 158). It can help them to discern the significant elements of a lesson from the insignificant elements, and thereby stage more memorable and engaging experiences for their students. For example, a teacher who struggles to operate a piece of audio-visual hardware or software during a class might initially dismiss the incident as insignificant. However, for the students it signals a lack of preparedness or inadequate rehearsal. It is an unwelcome distraction that directs their attention away from the performance. A teacher who appreciates the importance of performance might take steps to prevent that problem from recurring. Recognising that most of an actor's work is preparation for their performance, the teacher might invest more time in lesson preparation to ensure that props like computers, data projectors and slide presentations are seamlessly integrated into their performance.

The notion that work is theatre is a useful one for the field of experience design, but some caution should be exercised in its application. For instance, the scripting of interactions in Disney theme parks, described earlier in this article, has been criticised

by Sangiorgi (2009: 50) as a 'dehumanizing' strategy that reduces the personal freedom of Disney workers and makes them 'invisible as "real" persons'. If declaring work to be theatre leads to resentment or increased turnover among workers, then that is clearly a reason for concern. However, it is unlikely that this situation would arise in any workplace where individuals remain in control of the narrative and the extent to which they apply the model of theatre to their work. The criticism that has been levelled at Disney only arises when an organisation tries to control the behaviour of its employees in an attempt to stage experiences. Within educational institutions, decisions about experience design should be left to the discretion of individual educators, and not imposed by administrators or organisational policy.

Realms of experience

A second principle of experience design that will be considered in this section is the idea of drawing upon different realms of experience when designing engaging lessons. Pine and Gilmore classify staged experiences into four types or 'realms': entertainment, education, esthetic and escapist (2011: 41-64). Their classification system is based on how an experience engages people on two significant dimensions, as shown in Figure 1.

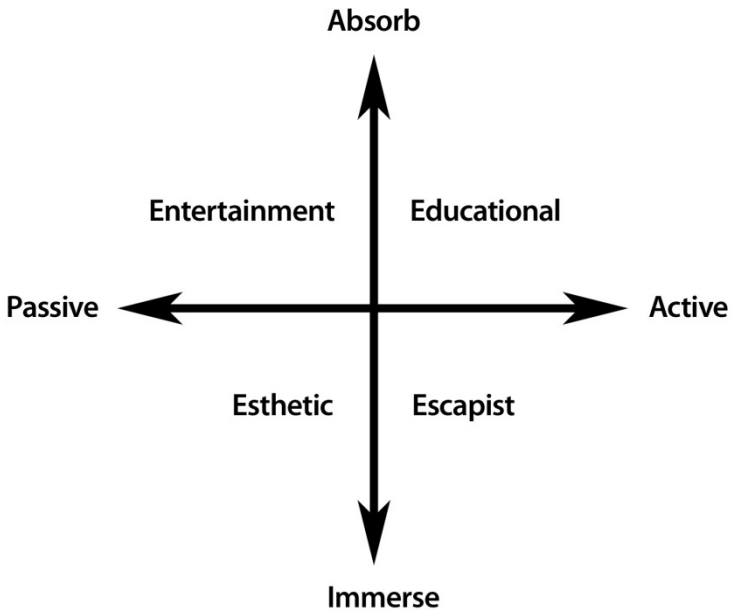

Fig. 1. Experience realms. Adapted from Pine & Gilmore (2011: 46).

The first dimension is an individual's level of *participation* in the event or performance that yields the experience. This dimension is represented by the horizontal axis in Figure 1 and it ranges from passive to active. *Passive participation* means that the individual does not directly influence the event. Listening to a symphony orchestra is an example of passive participation. *Active participation* means that the individual directly influences the event. Engaging in a physical sport is an example of active participation.

The second dimension is the kind of *connection or environmental relationship* that unites people with the event or performance that yields the experience. This dimension is represented by the vertical axis in Figure 1 and it ranges from absorption to immersion. *Absorption* means that the event occupies the individual's attention from a distance. Watching television is an example of absorption. *Immersion* means that the individual becomes part of the event, either physically or virtually. Playing a computer game is an example of immersion.

Overlaid on these two axes are Pine and Gilmore's four realms of experience: entertainment, education, esthetic and escapist.

- *Entertainment experiences* are characterised by passive participation and absorption. When people are entertained they passively absorb the event unfolding before them. Viewing a performance, listening to music and watching television are examples of entertainment within this definition.
- *Educational experiences* are characterised by active participation and absorption. As with entertainment experiences, the individual is outside the action. But unlike entertainment experiences, the individual must actively participate in the event to acquire skills or knowledge.
- *Esthetic experiences* are characterised by passive participation and immersion. They involve a closer or more intense experience of sensory stimuli than entertainment or education experiences in order to facilitate immersion. Although individuals immerse themselves in an event or environment, they have little or no influence on it. Visiting an art gallery or watching a live fireworks display is an example of an esthetic experience.
- *Escapist experiences* are characterised by active participation and immersion. When people have an escapist experience they are completely immersed in it, as is the case with esthetic experiences. But rather than play a passive role, they become active participants who can influence the event or environment. Playing a computer game or exploring a theme park is an example of an escapist experience.

The labels that Pine and Gilmore have used within their model of the realms of experience are not particularly intuitive. For example, in everyday conversation the term *entertainment* refers to much more than activities that are characterised by passive participation and absorption. Immersive activities that require active participation can be entertaining too. Furthermore, the terms *absorption* and *immersion* are rarely thought of as polar opposites in common speech. They are more likely to be used as synonyms. Putting aside concerns about terminology, Pine and Gilmore's model is useful in the sense that it broadens our understanding of the different forms that staged experiences can take. Some people imagine that staged experiences must always be entertaining because so many examples come from the entertainment industry. But staged experiences do not rely exclusively on entertainment, as this article has explained. Experience design is about engaging people, not necessarily entertaining them (Pine & Gilmore 2011: 55).

Pine and Gilmore suggest that experience designers should not limit themselves to just one realm when trying to design a rich, compelling and engaging experience. Rather, they should explore the aspects of each realm that might enhance the particular experience they want to stage (2011: 59). The richest experiences often encompass aspects of all four realms, centring on the so-called 'sweet spot' in the middle of the framework (Pine and Gilmore 2011: 58). Consequently, someone designing an educational experience should not focus solely on the educational aspects of the experience, but should ask themselves questions about the entertainment, esthetics and escapist aspects as well. What can be done to make the experience more entertaining, to enhance the eshetics of the experience, to help guests learn from the experience, or to immerse guests in the escapist aspects of the experience? Considering these questions can help experience designers bring the realms of experience together in compelling ways. For example, many educators will be familiar with the term *edutainment*, which was coined by Walt Disney in 1948 as a description for certain types of films that were produced by his studios (Bowdoin Van Riper 2011: 2). These films, such as the *True-Life Adventures* series, combined documentary and narrative elements to educate audiences while entertaining them. Today the term *edutainment* refers to many different forms of entertainment that incorporate educational messages – radio and television programs, films, museum exhibits, computer software, web sites, mobile applications and more.

Educational experiences have also been successfully combined with escapist experiences. So-called 'serious games' have opened up new opportunities for learning in business, defence, health care, and many other fields (Barnes, Encarnação & Shaw 2009). Serious games are computer games that have been designed for a primary purpose other than pure entertainment. They may be entertaining, but their main goal is usually to train or educate. For example, *Air Medic Sky One* is a serious game that teaches the basics of patient safety, teamwork and stress management to doctors in the early stages of their clinical career (Kalkman 2012). Players assume the role of a member of an emergency medical relief team and treat patients who have been affected by disasters such as forest fires in California or an earthquake in Italy. Active participation combined with the immersive game elements increase engagement and retention for learners. 'Serious games challenge the learner and keep him or her engaged during the learning process. It's the difference between watching a nature documentary and going backpacking in the wilderness', write e-learning experts Quinn and Neal (2008: 5).

Esthetics are also known to have an impact on educational experiences, both in online learning environments and physical teaching spaces. Norman (2004, p. 60) explains the connection this way: 'Attractive things do work better – their attractiveness produces positive emotions, causing mental processes to be more creative, more tolerant of minor difficulties'. Studies have demonstrated that esthetics play an important role in shaping user responses to online learning environments and web sites in general (Lavie & Tractinsky 2004). A course web site with pleasing esthetics can significantly decrease the cognitive demands on a learner (mental effort, stress and task demands) and increase motivation for continued use, thereby leading to

higher performance (Miller 2011). Users also draw on esthetic factors to judge the usability and credibility of online learning environments (David & Glore 2010). Esthetics play an important role in physical learning spaces too. Early childhood experts have demonstrated ways that educational environments can support children's learning through the conscious use of design elements such as light, colour, texture, sound, and smell (Ceppi & Zini 1998, Curtis & Carter 2003).

Theming experiences

A third important consideration in experience design is theming (Pine & Gilmore 2011: 67-78). This principle is evident in the design of many commercial enterprises including: theme parks such as Universal Studios (movies), Sea World (marine life) and Legoland (Lego bricks); restaurants such as the Hard Rock Cafe (rock music), Johnny Rockets (1950's American diner) and the Rainforest Cafe (rainforests); and casinos such as Caesar's Palace (ancient Rome), the Luxor (ancient Egypt) and the MGM Grand (classic Hollywood).

To illustrate this concept further, consider one of the most successful and well-known theme parks, Disneyland in Anaheim, California. Rather than present a random collection of attractions, Disneyland is divided into distinctly themed areas called 'lands'. Each land presents a specific theme through its architecture, landscaping, rides, costumes, music, food, merchandise and other elements. For example, Frontierland reminds guests of the pioneer days of frontier America, Fantasyland brings to life characters and places from children's stories, Adventureland recreates tropical jungles from exotic, far-off places, and Tomorrowland provides an optimistic vision of the future (Finch 1975). One of the benefits of theming is that it provides a central idea around which guests can organise their impressions. King notes that 'within any single theme area, no other theme is allowed to intrude, reducing the information overload that plagues visitors who feel they are being offered too much at one time' (1991: 30). Without theming, this organising principle is lost, as the following description of pre-1950 amusement parks illustrates.

> For decades, world's fairs and amusement parks had been confusing "nightmares" of environmental design. Each show or pavilion competed for the visitor's attention like billboards along a highway. There were "Wild West" shows next to circus acts next to international exhibits – a potpourri of visual contradictions entangled in a maze of criss-crossing streets and sidewalks. The result ultimately left visitors disoriented, sometimes lost, exhausted and often unreceptive to the ideas presented, or to the idea of ever coming back (Walt Disney Company 1989: 15-16).

Educators can employ this same principle of experience design in their teaching. They can identify and develop appropriate themes to serve as organising principles for the learning experiences they offer. 'Developing a theme and committing to it allows the subsequent story-building to proceed in a unified direction and achieve some coherent meaning', says Walt Disney Imagineer Joe Rhode (2007). 'The chosen themes become guidelines for deciding which information is, and is not, relevant to your presentation'. Thematic instruction has been shown to increase student motivation and

achievement (Beane 1997). As in the Disneyland experience, themes offer students mental organising schemes and ways of understanding new concepts. The challenge for educators is to choose themes that are relevant to their students' lives to ensure interest and engagement with the content. Concepts that work best depend on the students' age and level of development. For example, Bolak, Bialach and Dunphy relate how the introduction of an interdisciplinary thematic unit about exploring the universe energised students and teachers at a middle school (junior high school) in the Midwestern United States (2005). Inspired by Gardner's theory of multiple intelligences (1993, 1999), the educators integrated into their learning unit content from diverse areas such as language arts, social studies, science, mathematics, music, creative movement, visual arts and drama. The themed learning experiences included activities such as: simulating scientific concepts related to space travel; solving problems of working and living in space; building a small model of a space shuttle using NASA's plans; reading *The Little Prince* and studying the symbolism of the central character living on his own planet; studying Van Gogh's painting *The Starry Night* and creating a crayon resist; designing a space patch for a NASA uniform; composing original music and studying film scores related to space; and choreographing a dance that interpreted the movement of planets around the sun. As the pilot project progressed, parents reported increased student interest in attending school, and teachers observed increased student engagement and achievement. Teachers from other schools asked to be invited to planning sessions when they heard about the initial successes of the program. By the end of the project, standardised test results showed encouraging improvement, particularly from students with the poorest test records. While the use of a theme was not the only factor responsible for the success of this initiative, it guided the educators' planning and it contributed to a unified learning experience that captivated the students.

Optimal experiences

A useful concept from the field of psychology that can potentially be applied to the design of engaging educational experiences is that of flow. The term 'flow' refers to a deeply satisfying state of focused attention that was first identified by psychologist Mihaly Csikszentmihalyi in his studies of optimal experiences (1975). According to Csikszentmihalyi, people in flow 'are so involved in an activity that nothing else seems to matter; the experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it' (1990: 4). This description of flow bears some resemblance to Robinson and Aronica's concept of 'the Element', which they informally describe as 'the meeting point between natural aptitude and personal passion' – a feeling that takes people 'beyond ordinary experiences of enjoyment or happiness' (2009: 21).

Flow experiences are characterised by some common elements, which include a balance between the challenges of an activity and the skills required to meet those challenges; clear goals and feedback; concentration on the task at hand; a sense of control; a merging of action and awareness; a loss of self-consciousness; a distorted sense of time; and the autotelic experience. The term 'autotelic' refers to an activity

that is done, not with the expectation of some future benefit, but simply because the doing itself is the reward. Whenever people reflect on their flow experiences, they mention some and often all of these characteristics (Csikszentmihalyi 1990). Support for Csikszentmihalyi's characterisation of flow can be found in studies of many diverse activities, such as playing computer games (Chen 2007) and participating in sport (Jackson 1996), to mention just two examples. The activities that people engage in to experience flow vary enormously, but they describe how it feels in almost identical terms.

Not surprisingly, learning activities can be designed to be conducive to flow experiences. To illustrate, a universal precondition for the flow experience is that the challenges an individual faces in a particular activity are equal to the skills he or she uses in meeting those challenges (Csikszentmihalyi 1990: 52). In this context the terms 'skills' and 'challenges' are not confined to physical activities. Mental activities such as reading, mathematics, musical composition and computer programming can also lead to flow experiences. Flow theory suggests that if the challenges of an activity are too high relative to one's skills, one experiences anxiety. If challenges are too low, one experiences boredom. If challenges and skills are both low, one experiences apathy and the overall quality of the subjective experience is the lowest. If challenges and skills are both high, the likelihood of experiencing flow is maximised and the overall quality of the subjective experience is the highest (see Figure 2). The application of this theory to learning activities is clear. To create the right conditions for an engaging learning experience, the challenge of the learning activity should always be just one step beyond the learner's current skill level. Once the learner has mastered that skill, the level of challenge must increase again to restore balance to the activity and to prevent boredom. This application of flow theory to learning has proven to be relevant in many domains, from music (Custodero 2002) to software development (Armour 2006).

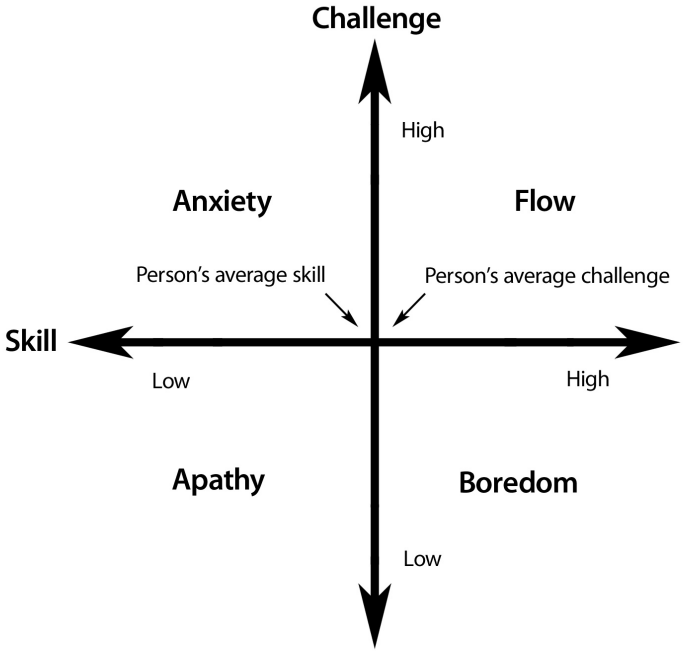

Figure 2. The four-channel flow model.
Adapted from Csikszentmihalyi & Csikszentmihalyi (1988: 261).

Shernoff and Csikszentmihalyi (2009) have provided many other examples of how flow theory can inform pedagogical practice. Their review of multiple studies on flow and student engagement from the past twenty years reveals that creating optimal learning environments requires attention to a variety of contextual, instructional, developmental, and interpersonal factors. For example, they suggest that much of the research they have analysed converges on the conclusion that meaningful student engagement depends on two independent processes, which they label 'academic intensity' and a 'positive emotional response'. Academic intensity is associated with the challenge and relevance of learning activities, which have strong effects on students' levels of interest and focused attention. In contrast, positive emotional response is associated with students experiencing high levels of skill, control and activity, which leads to increases in positive affect, enjoyment, esteem and intrinsic motivation. Both academic intensity and a positive emotional response are necessary for engaging students in the learning process, but these processes seldom operate together. For example, taking a test or solving a mathematical problem may produce academic intensity, but not necessarily a positive emotional response. Conversely, watching an educational video or attending an art class may produce a positive emotional response, but not necessarily academic intensity. Successfully combining both of these ingredients increases the likelihood of cultivating engaged learners and optimal learning environments.

Towards transformation

This article has drawn together selected theories from diverse fields such as drama, economics, psychology and entertainment, and demonstrated how they can be applied to the design of engaging learning experiences. Collectively, these principles could be considered the beginning of a theory of experience design for education. This collection is not meant to be exhaustive, but rather, indicative of practical applications of experience design within the domain of education.

If this emerging field of research and practice continues to develop, educators may see a progressive change of focus from staging experiences to enabling transformations. To understand this suggestion, it is necessary to revisit Pine and Gilmore's model of an experience economy, in which they described a sequence of four distinct economic offerings: commodities, goods, services and experiences (2011). Each successive offering has greater economic value than its predecessor because it is more relevant to what consumers truly want. For example, drinking a cup of coffee in a five-star restaurant (an experience) is more valuable than a handful of coffee beans (a commodity). Pine and Gilmore further suggest that when an organisation stages an experience that *changes* a client, that experience has turned into a new form of economic output – a transformation (2011: 241-70). Transformations differ from other economic offerings in the sense that they are effectual; they last beyond the moment of consumption. Transformations are also individual in the sense that the offering does not exist outside the changed traits that the client desires. Not all industries can offer potentially life-changing experiences or transformations, but examples of those that could offer such changes include healthcare, financial services and education. Are today's educational institutions in the business of delivering educational services, staging educational experiences, or transforming students? If the idea of enabling transformations is relevant to educational institutions, what are the implications of that change of mindset for curriculum design, entry requirements, pre-testing, assessment, tuition fees and other aspects of the education system? These questions point to some interesting possible directions for future research.

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