

# Studying Games in School: a Framework for Media Education

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## ABSTRACT

This paper explores how media education principles can be extended to digital games, and whether the notion of ‘game literacy’ is an appropriate metaphor for thinking about the study of digital games in schools. Rationales for studying the media are presented, focusing on the importance of setting up social situations that encourage more systematic and critical understanding of games. The value of practical production, or game making, is emphasized, as a way of developing both conceptual understanding and creative abilities. Definitions of games are reviewed to explore whether the study of games is best described as a form of literacy. I conclude that games raise difficulties for existing literacy frameworks, but that it remains important to study the multiple aspects of games in an integrated way. A model for conceptualizing the study of games is presented which focuses on the relationship between design, play and culture.

## Keywords

media education, media production, literacy, learning

Studying the media at school is often justified in terms of making the curriculum relevant to children’s lives. This is not a popular sop to their interests but to equip them with the skills and understanding to make sense of, and contribute to, contemporary forms of communication and representation [1]. Media education is also inherently polemic, arguing that the cultural materials that young people engage with outside of school, such as games or television, warrant investigation. Underpinning these pedagogic and political aims is a theory of communication which understands meaning to be constructed through different modes, such as the visual image and sound, and not just written text. As a consequence, studying the media has in recent years been described in terms of acquiring a form of literacy, designed to enable students be fluent in different media languages. This complements recent developments in literacy research, which emphasise that, with the spread of modern technologies, verbal language is no longer the primary symbolic system [2]. Contemporary texts, from newspapers to internet web pages, increasingly combine verbal language with visual images, sound, and graphics. Being literate today, therefore, means understanding and applying the grammars of different modes and media, and not just alphabetic writing. The concept of multiliteracies [3], or, in media education, media literacy [1], has engendered a range of sub-categories, such as TV literacy, cine-literacy, visual literacy and computer literacy [4]. This paper explores how media education principles can be extended to digital games, and whether the notion of ‘game literacy’ is an appropriate metaphor for thinking about the study of digital games in schools<sup>1</sup>.

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<sup>1</sup> Digital games encompasses video and computer games, as well as any game played on a digital platform.

## WHY STUDY GAMES?

Digital games are often portrayed as a distraction from education, preventing reflection by offering immersive, addictive experiences. The opposing argument is that young people are ‘digital natives’, inherently ‘media literate’ and able to navigate the perils and pleasures of virtual reality much more adeptly than their elders [5]. Related to this second position is the view that the cognitive skills which games develop are much more sophisticated than those usually required for school-based learning, with players acquiring a metalanguage for games in a way which rarely happens for school subjects [6].

So what might be the value of studying games in school? To counter the first argument, there have always been debates about mass media as agents of cultural decline, from the novel to television, which are successively usurped by fears about the latest media form. Yet audience research emphasises that people make sense of media in more active ways than the ‘media effects’ discourse allows for [7]. But in opposition to the second argument, it cannot be assumed that young people are inherently competent users of media. Although media forms teach the competencies required to use and interpret them (books teach us to read, games to play), this does not mean there are no gaps in young people’s knowledge and no room for making this more systematic and sophisticated [8], [9]. Gee [6] makes a strong argument for the critical literacies that informal player communities sustain. But the extent to which players develop these relates largely to their social circumstances; many young people have little access to the social contexts that enable and, most importantly, *motivate* critical consideration of games. Buckingham and Sefton-Green [10] argue that the creative and critical use which young people are assumed to make of digital technologies, and games in particular, is often over-estimated. For many players, informal learning only goes so far. First, there are issues of access and power; certain social groups, for example, may play a less prominent role in fan communities and have more restricted access to games. Consequently, they will have less opportunities and social purpose in considering games and game practices reflectively. Second, although game players may learn to ‘read’ games and consequently ‘write’ or produce their own approach to play, there remains an impasse between contributing to game culture through play and contributing by making games. Few players have the social motivation, institutional connections and practical tools to understand games by producing their own.

This makes a strong argument for developing forms of education and social situations that enable people’s interactions with games to be more productive than they might otherwise be. Whilst acknowledging students’ existing abilities, it is also possible to say that they can be provided with the material, cognitive and social resources to move beyond them.

It should be clear that our main interest is in teaching *about* games, not *through* games. To date, much of the games and education literature has concerned itself with using games as a means to teach curriculum content, such as history or ICT. The notion of ‘game literacy’ is then applied to the functional competences required to manipulate game hardware and software, and is often said to be a competence that teachers require, rather than students, who are assumed to already have it. Many teachers are indeed likely to have limited experience of digital games, and there is an issue about what kind of professional development might enable them to use them in class. Yet it cannot be assumed that all students play games or have experience of a wide range of titles. Furthermore, playing games and developing a meta-language about them involves different kinds of competences. Although playing games might be crucial to considering them in design terms, developing critical understanding of games is different from using them functionally as a delivery mechanism.

Studying games in their own right means locating them within a wider socio-cultural framework which encompasses game players, game culture and the game industry. Buckingham’s [1] model for

media education is three-pronged: text, audiences and institutions. So in studying television, for example, programmes are analysed in terms of their aesthetics, narratives, genres, representations, values, and other meaning-making structures; audiences are researched in terms of how they are targeted and reached, the pleasures they derive from watching television, fan culture, the role of socio-economic factors such as gender or class; and the television industry is investigated in terms of its structure, the technologies it uses, the relation television companies have with other media organisations, the design and role of advertising and sponsorship, the way markets are defined and industry regulation [1]. The emphasis is not so much on studying each element individually as on the relationships between them. Media education is often framed as a form of inoculation against media influences. In this model, however, the aim is to develop understanding of the interactions at play between the different aspects of media culture in a way which acknowledges the pleasures people derive from consumption and participation.

### **WHY MAKE GAMES?**

In presenting his argument for critical literacies in game playing, Gee [6] emphasises that players learn to interpret games as designed spaces rather than simply in terms of moment by moment play. They manipulate a game's resources to produce one of many possible forms of play. Gee's point is that play is an active, productive process which is not adequately described by the notion of consumption. In this sense, then, it is a form of 'writing'. This argument serves to highlight that consuming media is never simply passive, with interpretation, or 'reading', an active process of construction [3]. Games take this one step further by requiring the player to construct physically their own play – this distinguishes them from other media such as film. However, it is also possible to argue that another kind of production is *making* games. This involves more open-ended and calculated manipulation of game-based semiotic resources than is achieved through play. Saying this is not intended to erect some kind of developmental hierarchy between playing and making games. But there are significant differences in terms of the competences required and pleasures provided between playing and designing games – designing games means putting in place all the semiotic resources for the player to work with, defining their relationship and anticipating the different ways in which these will be used. Although the progression from game play to game design might be understood to lie on a continuum, encompassing activities such as altering options and modding (editing games), learning to make games requires a specific perspective on game design which many players rarely achieve. Yet making games and seeing how others play them develops understanding about how games create meaningful experiences that is important to an appreciation of games as media. It also provides another way of engaging with games and game culture which few players have access to.

For this reason, the Centre for the Study of Children, Youth and Media and Immersive Education are collaborating on a three-year project to develop a game-authoring tool that will enable young people to create their own computer games. The research is investigating how game making can be taught and learned in schools and what its benefits are in terms of media literacy. The project emerged from previous research that looked at how young people might use professional packages to make their own games [11]. This established that existing tools, such as Bryce 3D, took significant time to learn, which meant that young people were not in a position to produce the kinds of games they were used to playing. As a result, they had little motivation to learn the principles of game making since their work would have no audience. 'Making Games' therefore aims to develop a tool that does not require extensive programming skills and allows for the creation of complex and satisfying games.

The rationale for making games has already been touched on, but it is worth reviewing different versions of practical production in education to identify more precisely what might be its function in the study of games. Buckingham *et al* [12] identify four approaches, and then describe how media education provides a fifth paradigm:

(1) practical work as self-expression: making media is justified in aesthetic rather than critical terms and serves primarily as a vehicle for open-ended exploration. Although this approach acknowledges the validity of young people's interests, it shares some of the shortcomings identified above of a celebratory approach to the media, assuming that students are inherently able, rather than learn, to express themselves through different media forms.

(2) practical work as a method of learning: this approach is exemplified in Kafai's research [13, [14], which defines the value of game making in terms of developing subject knowledge, notably maths and science. Practical production is designed to implement a constructivist pedagogic approach rather than develop understanding of games *per se*. It is no criticism of Kafai to suggest that the medium is largely incidental to the intended learning outcomes.

(3) practical work as vocational training: the emphasis here is on developing professional skills in order to enter a particular industry. While computer games courses do often require students to engage in systematic critical study, theory and practice are not always well integrated. In fact, concern is sometimes expressed in the games press that courses rarely offer sufficient training to qualify students for entry into employment, and should more accurately be described as pre-vocational.

(4) practical work as deconstruction: this is a way of adding some practical dimension to the deconstruction of media texts. Students might for example be asked to explore the genre conventions of first person shooters by making their own generic game. Practical work is here valued primarily as a mechanism for developing more critical consumers rather than creative producers.

A fifth version is required to describe the particular purpose of practical production in contemporary media education.

(5) Here, practical work is used to develop both conceptual understanding of media as cultural phenomena as well as some of the practical skills involved in media production. It makes little sense, in fact, to define these two aspects independently; it is precisely in the interaction between theory and practice that the notion of critical understanding can begin to make sense, and from a pedagogic perspective, developed and demonstrated. This means that emphasis is placed both on the production process as well as the final product – students have to be able to make something relatively finished and polished, not simply learn some of the theory and techniques which contribute to it. So it should be possible to make games which play in ways which are not entirely dissimilar from the off-the-shelf commercial games.

Although this clearly grows out of version 4, the development and widespread availability of new technologies, such as the digital video and editing software, have to some extent superseded the earlier models by making media production much more widespread. Practical production in education can therefore no longer easily be distinguished from practical production in the home. This has two consequences. First, it means that conceptual understanding can be developed through creative production, since professional tools are now in many schools and homes. Second, it encourages a consideration of the pleasures which people derive from the media and the motivations they have in making their own. Practical production, in this scenario, *does* emphasise the development of practical skills – but not with a view primarily to provide professional training. Instead, the justification for practical skills relates to enabling people understand and use technologies more productively. However, this is not simply a question of supporting self-expression. Rather, the aim is to enable people participate in and contribute to media culture in ways which enable some manipulation of its semiotic, institutional and economic structures.

## WHY 'GAME LITERACY'?

Having presented a rationale for the study of games in media education, we now need to consider how games might be taught and learned. The notion of 'game literacy' suggests that games can be analysed as semiotic systems, sets of signs which can be 'read' and 'written', and that these signs are specific to a medium.

A linguistic paradigm has often been used in the analysis of cultural phenomena. Early studies of the media deconstructed film and advertising in terms of signs and signifiers (see for example [15] and [16]). This work drew on Saussure's theories, which viewed language as a stable set of entities to be decoded irrespective of their context or social function. Literacy, within this model, is a cognitive competency that learners acquire by grasping abstract grammatical rules. In recent years, theories of linguistics have emphasized the importance of social contexts in framing how signs can be read as well as the role of the audience in constructing meaning. Language is seen to be embedded in social and institutional contexts and deployed as a form of social action. As a consequence, sign-making should not primarily be thought of in technical terms but instead as a competence with social, cultural and political dimensions [3]. This view of language has more recently been elaborated into a theory of multimodality that examines the semiotic principles of different symbolic systems, such as visual images and music, and how they interact to create meaning in combination with each other [2]. Central to this theory is the notion that signs, or texts, are produced and transformed as part of a wider set of social practices. Reading and writing take place in particular socio-cultural contexts rather than in general.

Efforts to examine different kinds of semiotic practices have often divided these by medium, such as television or cinema. Tyner [4] argues that this belies the nature of literacy as a complex and interacting set of social actions; not only are literacy skills not medium specific, but contemporary texts increasingly combine different modes and media. From this perspective, the notion of 'game literacy' is unhelpful, since understanding games requires competences which are not medium specific, such as reading written text. One counter argument is that someone who is literate in one media may not necessarily be literate in another; a sophisticated, critical reader of print-based texts may not automatically become a sophisticated, critical reader of audio-visual material [9]. Certain aspects of media cross platforms, such as the notion of genre, narrative, representation, mode of address, point of view or audience. But their manifestations will be specific to a medium; game-based characters are not constructed in the same way as TV characters. This is the perspective from which specific versions of media literacies are championed; it assumes there are specific ways in which games create meaning, both in terms of grammatical resources, or affordances, and in terms of the social practices by which players transform and make sense of them. A second possible counter argument to Tyner is that although literacy cannot be splintered into discrete parts, it remains possible to analyse the semiotics of different symbolic systems, and the ways in which they interact in any one text.

It is worth noting that games problematise both traditional and contemporary notions of literacy by raising questions about what reading and writing involve. When referring to games as texts, theorists are divided about whether play is analogous to reading or writing [17], [6]. In the multiliteracies literature, this kind of debate has led theorists to collapse the conceptual differences between reading and writing [3]. Both are said to involve transformation; we read in particular ways to produce meanings which are in line with our social interests, and the same process characterises writing. Yet whilst playing games, or interpreting texts, can be considered a productive, creative process, this does not account for the specific competences required to design games. So although literacy can no longer be reduced to encoding and decoding verbal language, games make explicit the issues raised in contemporary efforts to account for the range of competences involved in making meaning.

The pedagogic and conceptual usefulness of the literacy analogy depends to some extent on the level at which games are interpreted, from the semiotics of algorithms to the specialist vocabulary of fans, and what one believes makes games significant as media forms. This in turn relates to how one chooses to define games.

## DEFINING GAMES

### Games as systems and games as media

In the literature on game design, emphasis is placed on different aspects of games. Salen and Zimmerman [18] offer a unified model for looking at all kinds of games and view digital games as a particular instance of a broader category of system design. Rollings and Adams [19] focus on resources specific to digital games, identifying the genres, narratives, representations and rule systems which characterise games created for computer-based platforms, from the handheld console to the PC. Chris Crawford's [20] approach falls somewhere in the middle drawing on design principles from different media but focusing principally on digital games.

There is no one correct way of viewing games, but how one categorises them in relation to non-digital games and to other media has implications for how they might be studied in media education. If digital games are interpreted as media, particular emphasis is placed on representation, on how the design is materially realised. Although game design may be understood to consist of generic structural components such as rules and settings, these tend to be analysed from a representational perspective. More emphasis is also likely to be placed on how game rules are instantiated through programming and the game's engine. The potential problem with this approach is that it can neglect analysis of a game's core mechanics or forms of interaction and how this might be translated from other media as well as across media. Instead the focus is on representation, which can tend to emphasise the differences between games rather than the similarities in playing them.

If the emphasis is on the relationship of digital games with other games, the focus tends to be on their underlying mathematical structures. Salen and Zimmerman [18] reveal the mathematical permutations behind a wide variety of games, exposing the commonality between them and justifying their premise that studying games as a single category of design has benefits. However, by focusing on what games have in common, they sometimes overlook the important ways in which they differ, as well as the relationship between game design, game play and game culture. When games are understood primarily as mathematical systems, many of the ways in which players may find meaning in games can be overlooked. So for example, it would not be unreasonable to suggest that the reason games associated with major media franchises such as *Harry Potter* or *The Matrix* are so popular is not solely because of the quality of their core mechanics but primarily because of their representational aspects.

These different dimensions of games raise issues for how they should be framed within media education. One of the central and unifying concepts of media education is representation. Yet Crawford [20] argues that this is the cosmetic aspect of digital games, which is not to say that it is unimportant but that it depends in part for its meaning on an underlying mathematical system. The principles at stake are not only semiotic but also mathematical. The interplay of system and representation, maths and semiotics is beautifully captured in Salen and Zimmerman's notion of 'meaningful play'. The purpose of the game's system is to create meaning. Analysing and producing games therefore takes place at the interstices of different disciplinary areas, including media education, but also maths, English, design and technology, art and computer science. In this respect, how games are defined depends in part on the subject area in which they are examined, and whether one is viewing them as a designer or a player. The argument for integrating these perspectives is that it enables an investigation of the relationship between games as texts and as social practices.

The conceptual and practical difficulties of achieving this are however challenging, not least to media education's traditional purview.

### **Games as narratives and games as ludic configurations**

To date, the educational argument for studying digital games has often placed particular emphasis on the opportunities they offer for studying new forms of narrative. Beavis [21] advocates using games in English classrooms to analyse how familiar textual components such as genre, characterisation, and audience, are re-formulated in interactive texts. Burn [22] draws on Murray's analysis of cybertexts and Ong's notion of secondary orality to highlight that games redeploy and transform narrative structures characteristic of much older genres, such as the Homeric epic, that might otherwise be difficult to include on the curriculum.

As part of the process of defining a new disciplinary area, the first issue of *Game Studies* gave vent to a debate about whether games should be examined as narratives or according to a new, game-specific framework. The differences between games and narratives are set out by Juul [23]: games are formal, whereas narratives are essentially interpretative; although audiences are active in constructing meaning in narratives, the process is very different in playing a game, as the player physically constructs the sequence of events. The distinction between reader and writer is therefore blurred, with narratives unfolding through interaction with an emergent system. Identifying the text and the audience is more problematic than with film or music.

As a consequence, Eskelinen [24] argues that gaming should be studied on its own terms rather than from a literary theory perspective. Computer games are best understood as remediated games, and so studied according to the principles set out by such theorists as Sutton Smith, Huizinga and Caillois, rather than as narrative or dramatic presentations: "in this scenario, stories are just uninteresting ornaments or gift-wrapping to games, and laying any emphasis on studying these kinds of marketing tools is just a waste of time and energy. It is no wonder gaming mechanisms are suffering from slow or even lethargic states of development, as they are constantly and intentionally confused with narrative or cinematic mechanisms." [24]

These debates have been somewhat doused by studies which take a more complex view of narrative and employ narratological frameworks to examine specific ludic configurations [25] [26]. In addition, recent debates have emphasised that the ludic and representational aspects of games are deeply intertwined; although they can be examined separately, this is not helpful for understanding how games make sense to players [27]. The relative importance of game play and narrative in understanding or designing a game will also vary by title. Finally, the consolidation of game studies as a disciplinary area means that it can take a more generous view of the various ways in which games can be studied – media education, for example, is interested in precisely the kind of marketing tools which might be dismissed from a programmer's perspective.

However, the distinctions between games and narrative that the debate clarified remain and raise particular issues for media education in two areas. The first is the relationship between text and audience. With games, the boundary between these is confounded. This calls for a framework which focuses on how players realise potentials within games and how those potentials are configured. The second issue is more pedagogical and relates to how best to frame digital games when teaching students how to make them. Should the process of production start with a consideration of narrative or ludic systems? How can these two dimensions of games be integrated?

### **A PRELIMINARY MODEL FOR THE STUDY OF DIGITAL GAMES IN MEDIA EDUCATION**

The challenges which games represent to existing media education paradigms as well as to definitions of literacy have been explored. This raises two related questions. First, should digital

games be part of media education and second, if they are to be studied as media, how should they be framed or situated?

To answer the first question: Computer games are an important aspect of what Kinder [28] calls the ‘transmedia intertextuality’ of contemporary culture. They not only take up a significant amount of children’s leisure time, but are also central to young people’s engagement with the media in general. Harry Potter is a good example of this: it is a set of books, games, films and web sites and has associated toys, comics, sticker albums and other merchandise. Burn [29] presents students’ interpretations of the Harry Potter narrative in its various manifestations as book, film and game, arguing that different readings are brought into play as students move between media. If media education is to retain its focus on young people’s contemporary media cultures, digital games should therefore be studied alongside other media.

To answer the second question: There are perhaps two ways in which digital games might be incorporated into media education, the first looking at games within a cross-media culture and the second focusing on what is specific to games. Games cannot be understood only in relation to other games, as many rely on multimedia awareness to be intelligible to their players. *GTA San Andreas* for example requires an interpretative approach that is not specific to games, but draws on much wider resources that players are expected to bring to the playing experience, such as knowledge of certain genres of film and music. From this perspective, the term ‘game literacy’ is something of a misnomer, since games are intertextual across media (Surman [30] makes a similar point in relation to cine-literacy). However, this is not to deny that games produce meaning in ways which distinguishes them from other media. First, semiotic resources, such as written text, visual images, 3D graphics and music have specific articulations in games; computer game music is often recognisably different from film soundtracks. Second, games have ways of organising these resources within an interactive system which comprises distinctive elements, such as sets of rules, economies, conditions and quantifiable outcomes.

To incorporate games into a media education framework, the focus should be on conceptualising the relationship between games as a specific form of design and games as cross-media phenomena, in a way which incorporates the experience of ‘meaningful play’, or in other words, the interaction between text and player. It was precisely in order to explore this relationship that Salen and Zimmerman [18] structured their book to examine three themes in succession: rules, play and culture. Although they provided an insightful analysis of each in turn, the interplay between the three topics remains problematic. This is partly a result of how Salen and Zimmerman define culture: “the environment or context within which a game takes place” (p 508). Games are said to either reflect or transform culture, but significantly they are not deemed to constitute culture. Salen and Zimmerman’s model means that rules, or game design, cannot be conceptualised as cultural phenomena, but only as underlying mathematical systems (and in this respect purely abstract). Across their book as a whole, there are numerous indications that they do see a relationship between game design and culture, but the conceptual organisation of the book means that investigation of these links is precluded. One of the consequences of this is that design (rules) is positioned as separate from development (culture), with design fundamentals understood to transcend somehow the concerns of those who make and sell games. The close relationship between design, production, marketing, and distribution is ignored, as is how all of these are paid for.

Media education is concerned with precisely these kinds of relationships. In Buckingham’s three-pronged framework [1], attention is paid to the interactions between texts, audiences and institutions. With games, this can be reformulated as design, play and culture. Whether a study of games based on this alternative three-pronged framework is best described in terms of ‘game literacy’ is another question, and one which raises much broader questions about the nature of literacy. The notion of game literacy is polemically useful in arguing for an understanding of

communication which extends to different modes and media, but its conceptual value is more ambiguous. The framework we have just outlined is primarily concerned with meaning-making practices in games. Many of these are not specific to games. But they will often have specific articulations in games. Some of the ways in which games create meaning involve concepts and competences more closely associated with maths or programming than semiotics. Perhaps then, the value of the term ‘game literacy’ can best be measured against its strategic role in opening a space in the school curriculum where these different aspects of games can be identified and conceptualised in relation to each other.

Rules<sup>Rules</sup>

Play

Culture

Play

**Figure 1:** The conceptual organisation of Salen and Zimmerman’s model of game design fundamentals. Rules underpin play, which takes place against a backdrop of culture.

Culture

Design

**Figure 2:** An alternative model for studying games as media. Emphasis is placed on the relationship between design, play and culture. Culture here includes fan culture, youth culture, media culture, corporate culture, etc; that is, culture understood as social practices as well as institutional structures.

## CONCLUSIONS

What we have endeavoured to do in this paper is present the educational argument for studying games in their own right. We have also offered one way of conceptualising how games might be taught and learned in media education, and considered the extent to which this might be understood as a form of critical literacy. The interactive or participatory nature of games challenges certain concepts central to media education, such as text and audience. Understanding how games are made also draws on knowledge which is traditionally outside the area of media education. However, not only are these issues central to understanding what is specific about games, there is also a strong case for studying them within a framework that can relate them to a broader cultural and institutional contexts. So although games pose problems to traditional ways of studying the media, it remains important to have one subject area in which their different aspects can be analysed in an integrated way.

The model is by no means definitive and is currently being researched in schools and youth clubs to define and expand it further. Many questions remain to be answered, including how to implement it pedagogically. It is important to note that the competences it suggests will not be gained only through formal study. However, it provides one way of conceptualising how games are taught and learned, and how students' existing abilities can be developed further.

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