

Examining the use of interactive video to enhance just in time training in the workplace

1. Introduction and context

In 2004 the UK government introduced legislation that required all properties for sale to be sold with an accompanying Home Information Pack (HIP), with implementation of the legislation completed by 2008 (Wilson, 2010). A HIP contains information about a property such as; the land registry certificate, energy performance certificate, local land charges certificate, and home condition report. Construction of these packs involved the input of many stakeholders such as; the land registry, solicitors and estate agents, and ratings agencies. For this reason, by 2008, specialised administration organisations had begun setting up operations specifically designed to facilitate the creation and quality checking of HIPs. Once such organisation was MMA (name changed for confidentiality reasons).

When MMA originally recruited and trained staff for the HIP programme, the job description emphasised quality checking and administration. However as time passed, the role evolved; becoming a central part of the HIP creation process, requiring staff members to quickly learn about managing relationships with key stakeholders, and gain a broader understanding of the HIP creation process. In this fluid environment MMA had adopted a Just-In-Time (Cheng & Podolsky, 1993) training approach, delivering essential information to staff on an as-needed basis. Information was provided through paper-based training alerts, and team talks. Management quickly noticed a number of issues with this approach: 1) Paper based updates provided little or no opportunities for interaction or engagement, and 2) staff often ignored them or little information was retained. Subsequently management decided to design and develop interactive video tutorials, using Captivate, to improve the standard of training updates provided. Pilot modules were developed to inform future practice.

The use of asynchronous technologies is recognised as a cost effective, and value added method of delivering training to employees (Kelsey, 2000; Summers, 2004), and enabling them to learn relevant information at a pace that suits them (Ghaoui, 2005). Interactive video in particular can be used to support traditional face to face approaches (Siemens & Tittenberger, 2009), with staff comfortable operating in media rich environments (Kaufman & Mohan, 2009; Smith & Caruso, 2010). However, it is important to avoid simply 'digitising traditional training materials' (Jochem *et al.*, 2004). Interactive video should provide a rich user experience that allows users to skim over content, re-read sections of importance, and slow down during difficult sections (Clark, 2001). This focused approach can facilitate staff members in concentrating on specific tasks which can be completed in bite-size chunks, and scheduled around their busy working day, resulting in cost-effective training solutions for organisations (Summers, 2004). Many authors argue that interactivity is key in removing the spectator approach that can be associated with standard video (Aiken & Aditya, 1997; Kelsey, 2000). To do this, designers must create interaction between the user and the content (Bates, 1990). These interactions take many different forms. Decision making opportunities can greatly increase user motivation, attentiveness, and engagement with content (Held & Kugemann, 1995). Moon *et al* (2001) found that illustrating real life scenarios that required choices to be made helped users explore multiple ways of solving problems, and understand the reasons for these choices. Mardis (2009) found that users learned more when provided with real life scenarios, where mistakes could be made in a safe environment where the

consequences were less costly. Martin and McEvoy (2003) found that the real-time decision making offered by interactive video had a superior impact on user individual decision making than traditional training approaches.

However, interactivity may not be enough. Almeda and Rose (2000) found that feedback and support increased motivation and engagement, with users responding well to on-screen corrections and advice. Hacker and Niederhauser (2000) argue that this feedback and support must be meaningful in order to humanise the experience of learning with interactive video. The use of multiple forms of media not only provides for feedback and a rich interactive experience, but also allows organisations to customise the experience for different departments, users and contexts (Marx & Frost, 1998). Video can be an excellent tool for motivation; when designed correctly it can have strong emotional appeal and can tap into learners values to elicit emotional responses and activate thoughtful engagement with the topic (Denning, 1994). The concept of enjoyment is closely related to motivation and is crucial to the development process. Enjoyment in interactive media is defined as sensory delight, suspense, thrill and relief, achievement, control and self-efficiency (Vorderer & Bryant, 2006). Humour, which can be viewed as a facet of enjoyment, can be implemented to produce an engaging communication tool, which along with staff opportunities for control and independent thinking (Denning, 1994; Kaufman & Mohan, 2009), create an asynchronous environment where staff can learn in manner than both motivates and provides high quality training opportunities.

While the use of interactive video in educational settings is widely researched and publicised, this paper aims to develop the debate by focussing on its use in industry settings, in an effort to better understand the impact on staff training.

2. Methodology

2.1 Sample

This study was carried out with a group of twelve (n=12) employees in a large technology and administration company called MMA. Staff who had originally been recruited for what was thought to be an administration and quantity checking role, where now undertaking additional skills such as customer service and relationship management. The study took place over a two week period during which the author interacted with staff as their facilitator.

2.2 The training

The training delivered was part of pilot initiative to investigate the impact of interactive video on the quality of training provided. Two modules were designed, developed and delivered to tackle two specific issues. Module one, 'The HIP process' was designed to provide staff with a deeper understanding of the HIP development process, and improve their ability to deal with queries from the various stakeholders. Module two, 'The escalation process' was designed to give staff a deeper understanding of the process of dealing with customer issues, whether to deal with these themselves or pass them on to a more senior member of the team. In order to facilitate the deployment of these modules, a basic moodle (www.moodle.org) site was set up, where staff could access content using individual logons. Individual logons were issued to ensure management could keep track of training content viewed. The software programme captivate was used to develop the video content due to its

flexibility in terms of its reporting features and the ability to incorporate a range of multimedia.

2.3 Description of process

Management felt the current method of JIT training was inadequate due to the lack of engagement and interaction, difficulty in measuring progress, and poor opportunities for revision. In an effort to tackle these problems, interactive video modules were developed with the following objectives: 1) support the current requirement for JIT learning with high quality self-paced learning for staff, and 2) increase the interactivity, engagement and enjoyment of training offered to staff.

During the development of the modules, care was taken to ensure staff could progress through content at their own pace so that work could continue in parallel. This was achieved by placing pause and stop buttons in each module so that staff could deal with customer queries and return to where they left off afterwards. Clear progress markers were used alongside recap sections enabling staff to track their progress throughout. The application recording capabilities of captivate were used to bring together the theoretical components with interactive recordings of external websites to ensure a real life learning scenario (for example, Fig 1). These simulation segments exposed staff to virtual scenarios that accommodated mistakes, and learning by doing. Various kinds of interactions were used throughout the videos. Basic interactions such as progress buttons and clickable areas were inserted so that staff could control the content and feel like more than ‘spectators’. Clickable areas (for example, Fig 2) were included to simulate action, decision trees (for example, Fig 3) were used to simulate choice and involvement, and recap sections (for example, Fig 4) were included at intervals so that staff could measure their own learning. While the author developed the overall presentation and design with motivation and enjoyment in mind, specific elements were used to increase these areas. Pictures and visual cues (for example, Fig 5) were used instead of words and charts to represent progress. Emotive and entertaining images were used to depict the outcome of decisions (for example, Fig 6), increasing the ‘human’ element in videos. The human approach was further developed by the inclusion of feedback and support (for example, Fig 7). Images were also used to give personality and identity (for example, Fig 8) to the processes throughout the videos.

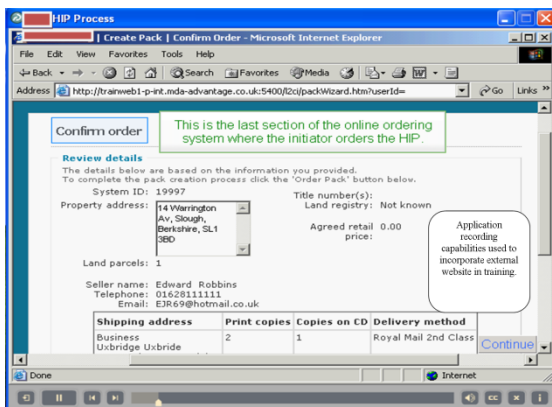


Figure 1

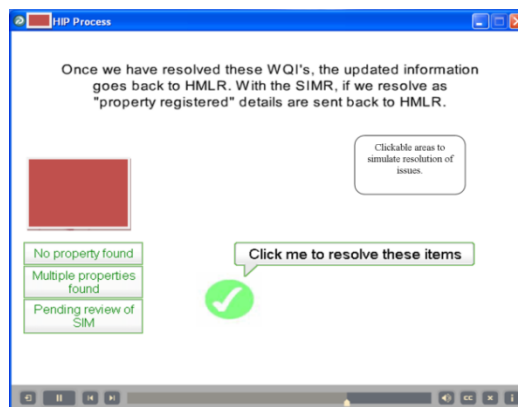


Figure 2

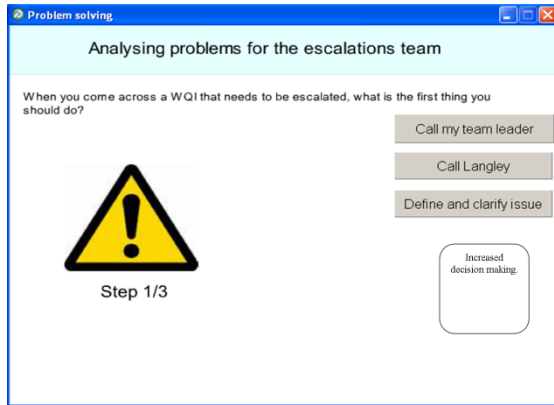


Figure 3

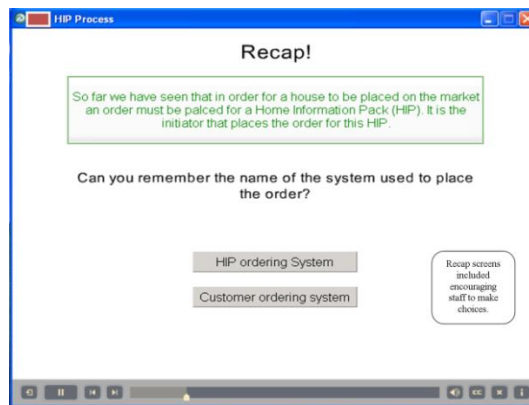


Figure 4

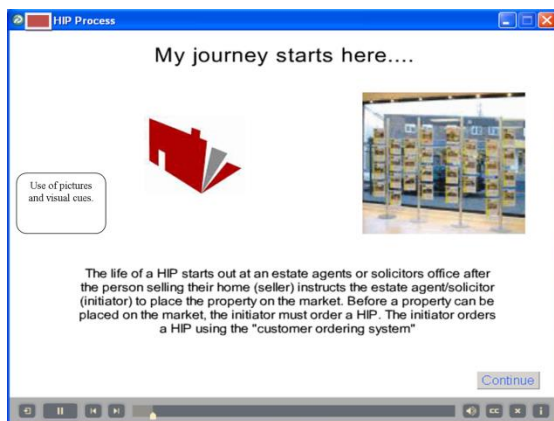


Figure 5

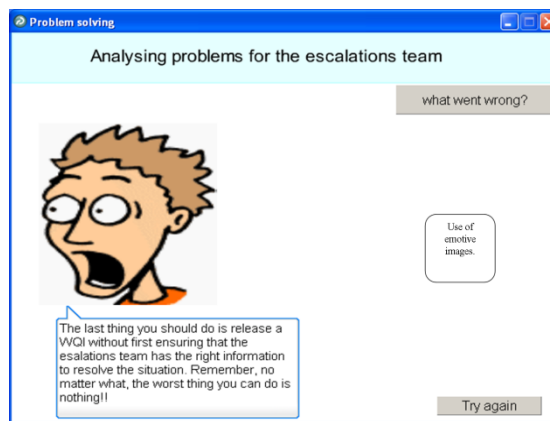


Figure 6

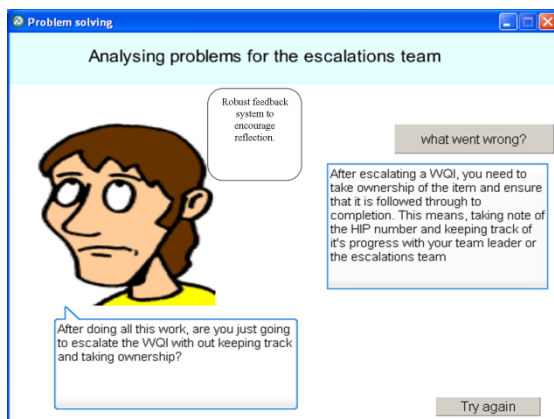


Figure 7



Figure 8

2.4 Instruments

Data was collected using semi-structured interviews. Data gathered was predominantly qualitative in nature, with three quantitative questions gathered for statistical note. The interviews contained three closed ended question, which used a five-point scale to judge staff perceptions of interactive video as a learning tool (1= “not effective at all”, 2= “somewhat ineffective”, 3= “neither effective nor ineffective”, 4= “somewhat effective”, 5= “very effective”). Following this, staff members were asked a series of open questions with the following two themes in mind; 1) What are staff members’ impressions of interactive video as a tool for supporting JIT learning, and 2) How interactive, engaging, and enjoyable was the experience for staff? What impact did this have on their learning?

In the first category, staff impressions of interactive video, specific open questions were asked, detailing the perceived benefits and drawbacks of interactive video in their workplace. In the second category, interactivity, engagement, and enjoyment, staff members were asked to outline their thoughts on the interactive elements of the modules, their design, and how they compared to the current training approaches. It is important to note that all questions were intentionally left as open as possible, so that staff members were free to express their own understandings and implications of the use of interactive video (Patton, 1990).

A research journal was used to gather the author's observations noted during the inquiry. These formed part of the research process (Lincoln & Guba, 1985), and are later used to support data presented from staff responses.

2.5 Procedure

Staff completed the modules over a two hour period during their normal working day. The interviews were conducted in the days directly after the modules were completed. Out of the twelve (n=12) staff, all twelve (n=12) participated in interviews, giving a response rate of 100%.

2.6 Data Analysis

In an effort to understand how staff members interpret the world (Maykut & Morehouse, 1994), qualitative data was analysed for patterns in the key words and phrases present in their responses. These were coded and grouped together as themes, staff member responses were assigned to one or more of these themes. These were then ranked according to the number of occurrences in the data to ascertain prominence.

3. Findings and Discussions

Key themes and findings are now presented using qualitative responses and extracts from quantitative data, to address the two themes outlined previously. Extracts from the author's journal will also be used to provide an additional perspective to the inquiry. This is followed by overall conclusions and recommendations.

3.1 JIT Training – Self paced learning

By their definitions, JIT training and self-paced learning, initially seem incompatible. However in the context of MMA, interactive video seems to provide the organisation with the ability to deliver training on a JIT basis, while allowing staff the flexibility to complete modules at their own pace during their busy work schedules. In fact, during the author's observations, a number of staff members were able to pause the training modules to deal with customer queries, and return to where they left off, when the issue had been resolved. More importantly however, the interactive video's appear to provide staff members with a better quality of training, with staff rating the educational value of the modules at an impressive 4.57 and 5 out of 5 respectively for module one and two. Staff members commented that the interactive videos were 'better than the traditional training provided', 'more educational', and presented information in a way that was 'clearer than receiving paper hand-outs'. In addition to the clarity provided, staff seemed to appreciate the ease of access and the ability to work and recap as needed, commenting that it 'really helps to recap on training' admitting that

sometimes they 'don't even read the paper updates' or the 'sheets get lost'. The videos on the other hand, made the 'information stick' and allowed staff to 'go back to the system for clarification' when they needed it. The ability to work at their own pace was summed up well by two staff members who said 'with the hand-outs you can lose track of where you are, but with these videos you can easily keep track', another said learning at her own pace 'made the information easy to understand and take in, helping her to know what to look out for when speaking with customers'. This suggests that interactive video can be used by organisations to enhance the quality of JIT training by providing quality self-paced learning for their staff, where staff have sufficient time to access, absorb and keep track of important information.

3.2 Interactivity, engagement and enjoyment

The interactive video content seemed to provide staff members with a more worthwhile training experience when compared with the processes currently in place. Staff seemed to be engaged, to interact with the content, and appeared to enjoy completing the modules. During the author's observations, staff members were focused on the content and on their own progression. In terms of interactivity, staff rated the interactivity of the modules 4.29 and 4.43 out of 5 respectively for modules one and two, commenting that 'inquiry and questions' kept them engaged, and encouraged them to 'think and see how much they already knew'. In addition to checking understanding, staff commented that the 'quizzical nature' helped them to 'recap on areas' they were unsure of. In terms of motivation and enjoyment author's observations noted that the use of striking imagery seemed to have an impact, with staff visibly reacting so some of images. Staff were also noticeably upbeat and chatty after completing the modules. Staff rated the motivation and enjoyment factor of the modules 4.14 and 4.71 out of 5 respectively, commenting that the use of 'emotive pictures and graphics' made them 'want to see what was coming next'. Not only did staff members feel that the use of imagery made the modules 'more interesting', they noted that using 'images as feedback' made them 'react to their choices' and 'think about the decisions' they had made. This data suggests that interactivity and engagement had a positive impact on staff training, with the use of questioning, decision making, and review, having a particularly positive impact. We can also see that the use of carefully selected images and emotive graphics has a positive impact on the quality of interactive video training, especially when used in conjunction with questions, to reinforce the consequences of decisions made.

4. Conclusions and recommendations

The use of interactive video in workplace training environments has largely been ignored in literature. Issues relating to its effectiveness as a training tool in regulated industries are largely non-existent. The purpose of this paper was to examine the impact of interactivity on the quality of JIT training provided in one organisation. Findings indicate that interactive video can support the delivery of JIT in organisations. When designed correctly, staff can navigate and complete content at their own pace, in their own time, and throughout their busy working days. Interactive video appears to be particularly useful in providing rich content that staff can use repeatedly to examine information in more detail or simply revise content when needed. The use of decision trees and interactive elements appears to encourage staff to engage fully with the content, thinking more deeply about the material, their options, and the consequences of the choices they make. Finally, the use of images and graphical elements can evoke emotional responses from staff, which can in some ways humanise what could otherwise be quite a technical exercise. It appears that interactive video can be a powerful

tool in providing seamless integration of high quality, cost effective training to staff, who seem willing to adopt this approach.

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