A Visual Journey: Enhancing the Learning Experience

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ABSTRACT

The author's objective is the evaluation of the effectiveness of the use of the visual means as a conveyor of an intensified learning experience. This research seeks to identify a more comprehensive and inclusive educational approach by exploring the potential of visual agency as an instrument of amplified natural learning outcomes. Ethnography is the chosen method of enquiry and the conclusions corroborated by existing psychological data.

The findings overwhelmingly support the inference that the introduction of a range of visual channels to the teaching delivery is beneficial and that, consequently, its application offers an appealing route to learners. The visual devise results as a valid addition to the general teaching strategy array and its usage facilitate an immediate, immersive experience. The study ultimately recommends promoting the application of visuals in the teaching practice as a vehicle that enables greater learning while facilitating the process of understanding and knowledge acquisition.

Keywords: Enhanced Learning, Inclusive Learning, Video, Visual Learning, Visuals

INTRODUCTION AND BACKGROUND

This research explores the hypothesis that the use of a range of visuals, including film and media, can be utilised as an instrument for enhancing the learning experience and promoting inclusive learning. It can also be contemplated as a tool for instructors to be used in order to facilitate students own independent learning capabilities (Hattie 2008) as well as a mean for whole brain learning (Sperry 1961, 1963).

Concepts such as the one of accelerated learning and its related strategies (Rose 1985, 1997) are central to the teaching reflections stemming from attempts aiming at maximizing efficiency in the teaching and learning area.

In this context, ethnographically collected data suggest the benefits of the employment of video and media as additional enriching elements to the more traditional of these applications.

For instance, the pursuit of defining objective settings could be possibly gained offering learners clear ideas of what is going to happen in the class with predefined outcomes, while providing a higher sense of achievement at the end of the lesson, with the use of videos acting as a powerful tool for immediate representation. The latter being able to encompass all the above.

Along the same line, the importance of building a classroom atmosphere can be

considered in the formation of a positive learning environment. For instance, through the display of graphic posters, helping to absorb ideas and vocabulary subconsciously and sometimes presented in advance to familiarise students to the new information gradually. This could be recreated in a more innovative, immediate and dynamic fashion through the aid of images to display content.

The overhead could also be achieved by an orientation towards the creation of state setting in the classroom, with the choice of body language and tone of voice by the tutor, the type of music throughout the lesson, to create the wished mood and atmosphere or the use of colour in presentational material. Here the additional introduction of visual format could act as a reiteration of the above.

Similarly, since the cognitive psychological chunking principle materialises in the segmenting of lessons into shorter periods, taking advantage of the attention cycle of the human brain, the particular configuration of video and media could be taken into consideration, such as the use of short film or clips in order to reach similar outcomes. In fact, research in this field suggests that the brain has limited capability, as it seems to be able to retain five to nine pieces of information, where the latter can increase if the material is presented in chunks (Miller 1956). Furthermore, elements of information within the chunks have a meaningful association (Gobet et al. 2001; Lindley 1966) which allows for the strengthening of short memory (Gabriel and Mayzner 1963; Sakai 2003). Therefore, it appears important to create more beginnings and more endings, since individuals tend to recall the first and last items of a series better than the middle ones (Coleman 2006). The evidence seems to support the presence of a Primacy (Asch 1946; Deese and Kaufman 1957; Jones et al. 1968; Murdock 1962; Rundus 1971; Shteingart 2013) and a Recency Effect (Bjork and Whitten 1974; Hendrick and Costantini 1970; Greene 1976).

Additionally, in the Theory of Multiple Intelligences (Gardner 1983, 2006), eight types of intelligence are proposed. In a traditional teaching session, some of these types could be over-represented. Accelerated Learning attempts to redress such imbalance. At times, the possibility of matching preferred learning styles (Barbe et al. 1979; Fleming 1995) is proposed in the quest of adapting teaching to this purpose (Pashler et al. 2008; Pritchard 2005). It is relevant to consider existing criticism on both validity and utility of such method, highlighting the possible occurrence of it as an exercise translating into actually limiting learners through labelling and

potentially creating a self-fulfilling prophecy (Vasquez 2009; Willingham et al. 2015).

In this tone, the discourse could be moved away from an argument of matching learning styles to one that aims at catering for all possible favoured learning styles instead. It is within this latest paradigm that the use of visual media could come into play, in virtue of inherently holding the ability and flexibility of a multifaceted tool.

This research examines whether video material, in particular, could potentially achieve an objective merit of being able to take the audience beyond the mere visual aspect (Mitchell 2005) and by intrinsically offering a multisensory input, a sort of augmented reality, only short of an immersive multimedia experience that a virtual reality immersion could provide (Biocca and Levy 1995; Dinh et al. 1999; Garb 1987).

METHODOLOGY

The investigation incorporates information from reflections of teaching staff in connection with a variety of adult educational settings, mostly colleges of FE/HE in the North of England, and spans numerous years of fieldwork. In similar fashion to other research by this same author, it bases its study on both a primary and a secondary type of scrutiny and shapes a series of debates on different teaching and learning features. In the specific, the use of ethnographic research where the collection of data is mainly achieved through participant observation, informal conversations, online information, and teaching staff feedback, is then supported by selected published literature within the fields of cognitive science and psychology. This material is subsequently presented and evaluated as hypothetically able to corroborate and explain the primary ethnographic findings. Considerations stemming from a psychological perspective distinctively refer to targeted areas of cognitive research relevant to the studied realm. The underlying intention for the ethnography adoption is to be attained in the effectiveness that is established through the unique advantaged in-depth opportunity of analysis offered by it (Atkinson and Hammersley 1994). The favoured position of the researcher, being able to take part within the context, which is examined not as an external presence but in the capacity of a true agent able to be part of that same worldview sought to be comprehended, is the compelling motive behind the utilised method of scrutiny. The possibility for the researcher to be fully immersed in the setting participating as a real member, rather than an extraneous entity, enables the quest attempt to collect data in the truest reliable manner and cancels or at least reduces to

the minimum the chances of an observer intrusion effect or any other kinds of meddling to occur. Aspects of the auto-ethnographic methodology of the author as a lecturer additionally grant a driving contribution to the enquiry.

SUMMARY OF KEY PRIMARY ETHNOGRAPHIC FINDINGS

Below is a selection of perceptions and experiences from teaching staff on employing the visual means as part of teaching resources. (Field notes 2010-2014)

- ***Positive feedback from students***

  Perception of an enriched learning experience:

  'While it is true that you select a clip for a specific topic area, it is also true that by watching that video, links to other topic areas often arise and further reflections are triggered naturally during the session. It all results in more learning and more profound critical thinking opportunities.'

  'After watching a video clip, the class seems to find immediate references for discussion. An identified concept appears to lead to another concept and often a further one. The analysis of the video content encourages thinking and creates chances for debate among students. It creates a creative and dynamic environment for learning.'

  Perception of students being more engaged in the lesson:

  'Students seem to gravitate towards the visual input spontaneously. There is usually no need to attract their attention, and the effect is not only temporary, but it also does last for all length of the activity. The effect is truly important and lasting. The visual stimulus can create a profound experience.'

  'Learners start talking spontaneously. They want to express their opinions and share their points of view. Even the most introverted find it easier to join in the debate.'

  Visuals help to bring clarity/understanding:

  'A video shown after a lecture does not simply reiterate the presented content. It does much more by adding details and providing alternative overviews. In doing so, its use brings that extra clarity needed for a true understanding of what is under discussion. I gather significant feedback pointing to this outcome, after using a visual element as a classroom activity.'

'I find it extremely useful to use some sort of visual media at the end of a unit/topic for instance. Precisely as a rehearsal and consolidation tool. It works very well as a revision instrument.'

- ***Observed benefits of teaching delivery***

  Powerful resource available to convey meaning:

  'It is really true that a picture is worth a thousand words. You could not transfer meaning to the same extent using just a couple of phrases. The image can easily embed that and much more while directly transmitting concepts. We could say efficiency is intrinsic to the visual form.'

  'The way a video or even just an image transfers a message really cannot be matched in any other form. It is just automatic, and often it does not require any further explanation, or just very little.'

  Flexibility in the use/ability to tailor activities:

  'The wonderful aspect of using visuals is that the same picture or photo can be used at different times, for different purposes and in various manners, both for teaching and for gathering feedback. The inherent versatility is the strength of anything visual. An invaluable asset in teaching resources.'

  'It is useful to maintain a bank of visuals as teaching resources to be used for specific purposes. You can then build relevant activities around selected ones.'

  Adaptability/tool can be used in different topics/subject areas:

  'The same video can be utilised for a series of topics and in a range of subjects. I do this all the time. For instance, I have used a video, exactly the same one as it was, for reflection on sociological issues, as much as for identifying psychological dynamics.'

  'A video lends it to a variety of applications, from enhancing cultural understanding to supporting language learning in the classroom.'

- ***Success/progress indication from assessment***

  Indication of increased learner contribution in class debates/discussions:

  'When using a video embedded in a classroom activity, the student level of engagement soars.

It does at different levels. On an individual level, students are clearly involved in making contributions, but also at a group level, with intense interaction and collaboration. The class spontaneously gravitates towards more complex debates dominated by highly deep reflections.'

Granting learners space for the expression of their creativity:

'Often brilliant ideas originate after watching a clip. It looks like the visual media holds an intrinsic power which can stimulate deep reflections and unleash remarkable creativity.'

'Recurrently, students feel somewhat comfortable to share their thoughts on what is discussed and also feel free to speculate on new perspectives and explore new options.'

'I find the use of a video ideal as a brainstorming tool in general, but especially effective if timed to an introductory topic.'

'I sometimes implement a flipped approach by starting the session with a short clip in connection with the new topic. I let it introduce the topic by also triggering questions and reflections from the class. I then add the theoretical content to it.'

Positive results from both formative and summative assessment:

'Feedback indicates that units delivered with a rich presence of visual media generally show evident positive outcomes in student work.'

'The employment of visuals in the class seems to facilitate learner progress. More so, content aspects are received, and meaning is conveyed readily in this fashion, often without the need for further clarification or reiteration.'

DISCUSSION AND ANALYSIS

Various successful outcomes arising from the ethnographic findings of this paper, in connection with the use of visual agents, could be substantiated by evidence stemming from the discipline of psychology specifically and cognitive science more in general.

Most conclusions emanating from cognitive research suggest an advantageous orientation towards a multi-sensory facilitating strategy and show the importance of potentially including the administration of all learning styles within the teaching resources asset. It seems rather pertinent to present a varied toolbox and multiple modes of accessing contexts (Hattie 2011) and maintaining an aim of maximising accessibility to engagement in the learning

experience (Tomlinson 2014).

The Cognitive Theory of Multimedia Learning (Mayer 2001; Mayer and Massa 2003) proposes the manifestation of a more effective conveyance of notions utilising multiple methods of sensory input, where learners exposed to multi-sensory environments result more likely to recall information.

Ultimately, evidence indicates that there is a significant power in visual storytelling (Asch and Ebenholtz 1982), with better learning materialising through the utilisation of words and pictures combined than words alone. The multiple channels available for working memory (Baddeley 1992, 1999) appear to strengthen information processing capacity (Sweller 2005), and the employment of animation poses itself as a learning enhancer (Park 1994; Tversky et al. 2002). Individuals seem to benefit more from learning through words and pictures blended than words alone (Mayer and Simms 1994), and the combination of narration and video is more effective rather than the one of narration and text (Mayer 2005). The full force of the visual learning mode is articulated in various papers. Images shown to possess the capacity to assist and boost learning (Reed 2010) and information represented visually and verbally appears to convey meaning more efficiently (Sternberg 2003). The Dual Coding theory (Paivio 1969, 1971, 1986) portraits a scenario where visual and verbal information is stored separately in memory. In effect, concepts encoded in words are only encoded verbally, while concepts learned in picture form are stored both visually and verbally, in a dual manner. Overall, following multimedia presentations, chances are higher for information to be recalled at a later stage (Brunye et al. 2008). Further views promote and support the concept of a picture superiority occurrence (Shepard 1967; McBride and Dosher 2002; Curran and Doyle 2011). While other findings seem to have ground to criticise these (Amrhein et al. 2002; Boldini et al. 2007), it emerges difficult to negate and discard the suspicion of vision being the chief perceptual sense in humans (McGurk and MacDonald 1976; Calvert et al. 2004; O'Shea 2005).

The video as a medium can also help to see holistically. Normally our visual perception process directs us to perceive the bigger picture rather than details. When this mechanism is disrupted and the relative neural pathway compromised, then the natural face recognition process cannot take place. The case of "not being able to recognise the person across the road" for instance can be understood through the cognitive pathology taking the form of Prosopagnosia,

which can be of both a congenital (Behrmann and Avidan 2005; Gruter et al. 2008) or an acquired (Barton et al. 2004; Gainotti and Marra 2011) origin. Difficulties in holistically recognising faces are compensated by a less effective feature focused strategy (Richler et al. 2011). Since images and videos present content in a holistic shape, we can assume that these can offer more immediate and intense aid to information detection and material presentation.

Cognitive psychology provides further information by showing that visual perception clearly involves more than our senses and the consequent problems that can manifest in cases where the emotional connection is severed. Expressions such as "This is not my wife! She looks like my wife but is an imposter" are often stated by individuals affected by the mirror condition of Prosopagnosia, taking the name of Capgras Syndrome. The delusion can go as far as compromising, in a very similar manner, the recognition of pets and objects such as one's own house. It is a neurological disorder (Ellis and Lewis 2001) caused by organic brain lesions (Ramachandran 1998) or degeneration such as dementia (Forstl el al. 1991; Josephs 2007), and it is expressed as an impairment of the automatic emotional arousal system (Ellis and Young 1990, 1997). Visual media with its inherent ability to create and transferring emotions can provide a means for maximising that natural perception mechanism and memory reconstruction process ordinarily taking place.

Videos and any images, in general, have the intrinsic power of telling stories and planting ideas, in a process that is emotionally charged, which has the bonus of involving different pathways of the brain, allowing the audience a possibility to express empathy with the narrator (Stephens et al. 2010). The power of narrative on its own can achieve the same without technology; however, the latter acts as an enhancer in the process. To make an analogy, there is no need to use a computer to participate in everyday life successfully, however, through the former, a whole new dimension can be recreated and at a totally distinct and profound level.

The use of visual avenues poses the question to where its employment could at times act as an obstacle, impeding the creative process in the learner, by the act of providing an artificial step by step guide to perception and consequently obliterating a more spontaneous insight. Cognitive findings enlighten in this sphere suggesting the presence of a type of direct perception according to a Bottom-up Theory, starting with a stimulus activating the sensory apparatus (Gibson 1966, 1972). Here the existence of visual illusions indicates there exists a strong ground

for this assumption not to be comprehensive. However, perceptual ambiguity could be supported by a constructivist indirect Top-Down Theory, in which contextual information provides help to pattern recognition, appears to be more predominant (Gregory 1970, 1974), with schemas playing a central role in the process (Bartlett 1932; Brewer and Treyens 1981; Mandler 1984; Shank and Abelson 1977) and a major role in general perception and subsequent memory reconstruction. The brain tends to systematise information into meaningful ways, accommodating it into schemas, configuring pockets of memory storage, assisting in making sense of new information and subsequently proceeding to integrate and organise it. The information is then included in pre-existing schemas (Sweller 2003) and finally interpreted according to subjective meanings. The cognitive apparatus does not seem to allow a vision of reality as it is but as it helps to serve survival instead. The relationship between perception and reality appears useful but arbitrary at the same time (Hoffman 2000).

Student activity of recall, because of unique exercise of reconstruction, can contribute to creativity, since there is evidence that fragments of information are not recorded mechanically like a computer machine and recalled merely in an objective manner. Instead, we subjectively make categorization and elucidation of the collected memory.

Substantially, all kind of visuals can fulfil all the above-mentioned notable sequel efficiently.

However, the ultimate learning enhancing experience could be taking shape in the form of virtual reality exposure (Virtual Human Interaction Lab 2015) maximizing outcomes in terms of mental process efficiency (Dinh et al. 1999) and positive impact on overall cognitive performance.

CONCLUSION AND RECOMMENDATIONS

The core of this investigation resonates with wider research on the ability of visual media to promote learning (Chambers et al. 2006; Hovland et al. 1949; Kozma 1991; Shephard 2003). It highlights the value of different visual modes as teaching resources assets (Champoux 1999; 2001) and the flexibility of these to adapt and be subject specific (Serva and Fuller 2004; Wolensky 1982). It also confirms the postulate that a variety of visual instruments can be employed as an effective conductor of enhanced learning, endorsing cognitive processes such as information recall (Cowen 1984), with the potentiality of taking the learning involvement a step

closer to multisensory integration (Lewkowicz and Ghazanfar 2009; Stein et al. 2009) for a full perceptual immersion. It reveals the existence of a devise offering tutors a prospect for an operational presentation of content and an effective transfer of educational material, as much as a vehicle enabling learners to access knowledge efficiently, while providing a catalyst for developmental creativity and critical thinking. It recommends any design and implementation of a multimedia centred teaching approach, conducive to a more solid, inclusive and rewarding learning experience. The author supports any further speculation and application in this area, promoting the employment of visuals in the classroom, both as a teaching and as a learning instrument.

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