

# The Significance Of Employing Visual Communication In Classroom And Online Setting

**Sundke Aatif**

*Assistant Professor*

*Department of Law*

*Tilak Maharashtra Vidyapeeth, Pune - 37*

## **Abstract:**

*This paper will scrutinize the need necessity to integrate visual information into classroom and online learning setting. Visual communication is the transference of thoughts and information in figures that can be observed. It is in part or whole depends on eyesight. It's a huge range which comprises signs, typography, drawing, graphic illustration, industrial design, advertising, animation, colour and electronic sources. Learners today are encircled by visual technology in the real world and virtual worlds that they live within. Classroom and online instructions ought to take benefit of the power of good visuals and informational graphics to communicate abstract concepts.*

**Key Terms:** *Visual Communication, Classroom, Online Setting*

## **1.1 Introduction:**

Present research paper will scrutinize the requirement to integrate more visual information into classroom and online learning setting. Students nowadays are encircled by technology that barrages them with visual information. Images pass across their TV screens, Computers, and Smartphones every minute of on a daily basis. Notwithstanding this, many classroom instructions is restricted to lectures, and many online learning settings are barely more than digital textbooks jamming screen after screen with only words. Educators of the era must take the benefits of the *eye-minded* nature of today's students.

According to Paul Martin Lester “We are heading towards a visually arbitrated society, facts of the world for people are complete not by the words but by interpreting the images.” (Para 6). Plentiful analyses have revealed that resources that make use of visual communication are time and again more efficient than resources that rely solely on text to commune. This paper will inspect some of point of views that have been made both for and against the improved use of visual information in the classroom and virtual world.

Given the clout of visual information, this paper will also glance at the work of Edward Tufte who has mastered the use of graphics to convey complicated concepts. Tufte (2006) uses principles of diagnostic thinking and utilizes them to analytical *design* stressing that, “The purpose of an evidence presentation is to assist thinking” (p.137).

The paper will wind up by groping a number of approaches for using visuals in online setting. This assessment will include looking at the efforts of Jakob Nielsen, a most important web usability specialist. This prime aim of writing the paper is to discover how effectual visual information can assist instructional designers achieve in producing more useful learning setting.

## **1.2 Objectives of the Study:**

Here, in the present study, the objectives are to focus on understanding the significance of employing visual communication in classroom and online setting. At this point, the researcher has executed this study to comprehend:

- The importance of visual literacy in this digital age of visual communication.
- The effects of visual communication in classroom.
- The employability of visual communication in classroom and online setting.
- The results of visual communication and how it is beneficial in today's time with reference to pandemic Covid- 19.

### 1.3 Analysis:

#### 1.3.1 The Pros and Cons of Visual Information:

This segment of the paper investigates some of the point of views that have been made supporting both for and against the application of visual information in an education environment. A lot of researches have confirmed that resources that use visuals are further effectual than just using text. Nevertheless, experiential research has not presented obvious facts on one side or the other. Some scholars have found that supplementary aspects ought to be taken into consideration while looking at the visual vs. verbal argument.

#### 1.3.2 Beneficial Impacts:

Some in education have encouraged for the teaching of *visual literacy*. Visual literacy, largely classified, is the ability to “communicate and understand through visual means” (Riesland, 2005, para. 4). This is perceived as an important skill for students who being asked to code and decode ever convoluted messages in a media-rich society (Riesland, 2005).

Phillip Yenawine (1997) wrote in “Thoughts on Visual Literacy” that visual literacy engages a set of skills varying from easy identification (*naming what one sees*) to difficult comprehension on “contextual, metaphoric and philosophical levels” (p. 845). These are skills that improve during childhood, but must be polished over a period of time. These skills must then be redefined as new visual technology modifies the technique we all communicate.

“By enlightening students to comprehend and communicate through visual modes, educators give power to their students with the essential tools to prosper in progressing media-varied environments,” wrote Riesland (2005). “The meaning of education is outdated and therefore the novel classification must account for the technologically evolving landscape” (Para. 4). Learners should be trained to communicate with a level of visual modification that will take them through the multimedia-reliant setting of higher education and the modern work setting. Furthermore, visual literacy instruction will advance learners for the vibrant and continually altering online world they will unavoidably be communicating through” (Para. 10).

This *change* toward the visual is also shown by the modifications perceived in science textbooks (Kress *et. al.*, 1998). An assessment of science textbooks discovered a shift from visuals that supported text explanations; to text that supported visual explanations. This brings the argument that graphics now possess more meaning and are essential to the meaning of modern texts and meaning-making systems (Kress *et. al.*, 1998).

The significance of applying visual information is also seen in the Dual Coding theory propounded by Allan Pavio (1979, 1990). He put forward that individuals have one memory system for verbal information and the other separate memory system for imaginal (visual) information. The verbal memory system comprises language systems; both auditory and speech. The imaginal memory system contains visuals, graphics, and charts; along with sounds, tastes, smells, and nonverbal notions and thoughts (Pavio, 1990). Since information in either system can activate memory information in the other system, “the chance of learning is much greater when two, rather than one, memories are involved” (Lohr 2003, p. 37).

Paivio (1979) also affirmed that due to the disparities in these memory systems that, “verbal behavior mediated by imagery is likely to be more flexible and creative than that mediated by the verbal symbolic system” (p. 435). This escorts to the argument that mental imagery is seen as holistic and innovative, while mental verbal procedures are considered as linear and analytical (Arnheim, 1993). Since this twofold coding, both the visual and verbal memory systems should be aimed by teachers whenever feasible.

The final argument supporting visual learning appears from the learning style models put forth by Richard M. Felder and Linda K. Silverman. Felder and Silverman (1988) conceived that the means people obtain information could be split into three main categories or modalities. These three modalities consist of: Visual (*sights, pictures, diagrams, and symbols*); Auditory (*sounds and words*); and

Kinesthetic (*taste, touch, and smell*). Felder and Silverman (1988) stated that, “An extensive body of research has established that most people learn most effectively with one of the three modalities and tend to miss or overlook information existing in either of the other two. There are hence visual, auditory, and kinesthetic learners” (p. 676).

Difficulties appear when there is a disparity between students with visual, auditory, or kinesthetic learning styles and setting that do not match that style of learning. Learners who have a sound inclination towards visual or verbal communication have genuine problem learning in a setting which does not maintain that preference (Felder & Silverman, 1988). Difficulties also come up when there is a difference, “amongst the chosen input modality of most learners and the ideal presentation mode of most educators” (Felder & Silverman, 1988. p. 677).

Felder & Silverman (1988) narrated that teachers must search for a balance of instructional strategies by applying both visual and auditory modalities (and if feasible kinesthetic) to strengthen learning for *all* students. This denotes that classroom educators who just lecture, and online teachers who only use text to teach, *must* make available visual materials for their students. Pictures, diagrams, and sketches do better for exemplifying abstract concepts. Process flow charts, network diagrams, and logic or information flow charts have to be incorporated to explain more concrete procedures. Mathematical functions ought to be demonstrated with the help of graphs; videos or else live demonstrations are best to explicate working processes (Felder & Silverman, 1988).

### 1.3.3 Adverse Impacts:

Defectively planned visuals can truly hamper the learning process. Visuals should harmonize with text and the purpose of the teaching to efficiently enhance learning. Visuals that are not reliable, do not harmonize text, or the objectives of the teaching slow down learning (Clark & Lyons, 2004). Hence, designing effectual visuals is a critical task of designing effective instruction.

A handful analyses regarding using visual information have been sure and affirmative. A 1984 research paper disagreed statements that the using graphics enhanced decision speed and quality over other modes of data demonstration like traditional tables (DeSanctis, 1984). The paper revealed that graphics were unproductive in communicating information than traditional tables. More prominently, the review presented the proof that features that make graphs visually attractive (*color, design complexity, realism*) could be detractions from actual understanding (De Sanctis, 1984). Visual information must not divert or baffles learners. Visuals should assist to resolve perplexity and emphasize essential information.

Those designing visuals must also be vigilant to appeal to learners’ concentration to the accurate information with the accurate approach. Visuals must not be employed to guide learners to just the inciting or amusing parts of a presentation (Sherry, 1996). Effective visual information must aspire to do much more than entertain. Visuals that do not support considerate scrutiny of the information may actually obstruct with the intent of a lesson (Sherry, 1996).

### 1.3.4 Envisaging Information:

Whether you agree or disagree with these point of views, the majority of teachers would accept that there are some types of information that using textual communication alone is just not the most favorable solution (Kendler, J., n.d.). Certain information calls for a collective presentation of visual and verbal communication. The guide in this topic is Edward Tufte, a skilled in the management of informational graphics such as charts and diagrams.

Tufte has penned down numerous books on the theory and practice of designing informational graphics such as: *The Visual Display of Quantitative Information* (1983), *Envisioning Information* (1990), *Visual Explanations: Images and Quantities, Evidence and Narrative* (1997) and *Beautiful Evidence* (2006). Tufte (1990) noted that the purpose of any chart, graph or diagram is not just to convey statistical information in a comprehensible way. The actual duty of an excellent informational graphic is to narrate a tale that supports in decision-making (Tufte, 1990). Sound design is clear thinking made

visible. According to Tufte (2006), “the book titled ‘Beautiful Evidence’ is about how observing changes into showing and how empirical observations changes into explanations and evidence” (p. 9).

### **1.3.5 Tufte’s Grand Principles:**

In the opinions of Tufte (2006), consecutively for an informational graphic to be really informative it has to stick to its six *Grand Principles*. These principles are explained in depth in the book, *Beautiful Evidence* (2006) and explain that all sound informational graphics must: implement visual comparisons, illustrate causality, demonstrate multivariate data, incorporate all visual elements (*words, numbers, and images*), be well successively and be content-driven. Tufte (2006) elucidated that, “The purpose of an evidence presentation is to assist thinking”, and that the six principles of logical design “are derived from the principles of analytical thinking.” (p. 137). He noted down that these design principles were pervasive and, “not tied to any particular language, culture, style, century, gender, or technology of information display” (Tufte, 2006, p. 10).

### **1.3.6 A New Terminology:**

In toto to his “*Grand Principles*,” Tufte (1983, 1990, 1997, 2006) also presented the information design field with a new terminology. This integrated new words to explain bad design, like *chart junk* and the *lie factor*. Tufte also formed his own words for good design, such as *high data-ink ratio* and *high data density*. He encouraged the *mapping* of pictures, which is his term for visually explaining images with pertinent comparisons, scales of measurement, labels, or explanatory diagrams that are sited next to, or are placed on top on the pictures (Tufte, 2006). Tufte also initiated the concept of *escaping flatland*. This is the requirement for designers to break away from two-dimensional presentation by viewing multivariate data in three or more dimensions (Tufte, 2006).

### **1.3.7 Design Obstructions:**

One of the foremost obstructions to sound visual information design is low resolution data presentation. Tufte described that designers should be vigilant of the restrictions of exhibited images and computer displays. These sorts of displays have excessive noise to sufficiently show data rich information. In the opinions of Tufte “Noise is costly, since computer displays are low- resolution devices, working at extremely thin data densities of a map or book page” (p. 89). In these circumstances of *low resolution* educators should offer printed handouts that provide adequate resolution to present abstract informational graphics.

This low-resolution condition makes the furthest obstruction for online educators who are constrained by computer screens. These educators also can provide downloadable graphics that can be printed out at higher resolution, but the hitch goes further than that. Tufte (1990) mentioned that since computer monitors cannot display much in the particular eye span, information obtainable on computer screens is usually “stacked” in numerous layers. This makes computer users to normally get lost, asking the question, “Where am I?” (Tufte, 1990, p. 89).

As per the opinion of Tufte (1990) “This reflects the essential dilemma of a computer display: at every screen are two powerful information-processing capabilities, human and computer,” “Yet all communication between the two must undergo the low resolution, narrow-band display screen terminal, which chokes off fast, precise, and sophisticated communication” (p 89).

### **1.3.8 Presenting Complex Information:**

The ultimatum for online educators is striving to use visuals in a low-resolution environment, restricted by the resolution of the internet. These impediments can be conquered with appropriate preparation and sound graphic design. William Horton (2006) stated, “At its best, e-learning is as good as the best classroom learning. At its worst, it is as terrible as the worst classroom learning. The difference is design” (p. 3).

### 1.3.9 The Necessity for Core Principles:

Teachers who are teaching online should have a thorough understanding of the basic graphic design principles. Ian Brown (2000) called visual and design principles the over and done partner in multimedia and Web development. He also stated that Basic, core design principles are usually disregarded in the curriculum of educational multi-media courses. Educators who are teaching to upgrade new media for the classroom must be offered with core visual, graphic and design skills essential to create worth products. In adding together, teachers should realize how to design sound information architecture. Time and again a web page may seem fine visually, but off design and organization escalates perplexity in students and causes them to “get lost” (Backer, 2004, p. 77).

### 1.3.10 Usefulness of Designing Web:

Jakob Nielsen is a leading Danish web usability consultant. Jakob has publicized the subject of usability and the concept of usability testing, for designers, web developers and commercial clients building commodities on the Internet. His well-known internet column, *Alert Box*, produces more than 5.5 million page views every year, and he has in print a number of books including: *Designing Web Usability: The Practice of Simplicity* (1999).

In the opinions of Nielsen (n.d.), “Usability is a *quality attribute* that assesses how easy user interfaces are to use. The word ‘usability’ also refers to methods for improving ease-of-use during the design process” (para.3). Any booming online designer must comprehend this notion not considering if they are designing for the public *internet* or for a closed education *intranet*. On education intranets, usability is a subject of learner output (Nielsen, n.d.). Time that learners squander being adrift in an online learning system (or pondering complicated instructions) may lead to disturbance, meager productivity, poor grades, and weak student retention.

Usefulness is described by five trait components consist of: learnability, competence, memorability, mistakes, and satisfaction (Nielsen, n.d.). Learnability denotes to how easy it is for users to achieve basic tasks the first time they come across a new webpage design. Competence focuses on how rapidly users can achieve tasks once they have learned the design. Memorability refers to the aptitude of users to reinstate skill when they come back to a design after a period of time. Mistakes denote how many mistakes users commit, how grave are the mistakes, and how effortlessly can users improve or learn from the mistakes. Lastly, Satisfaction looks at how pleasurable is it to use the webpage design, Keywords, typeface variations, coloured text, and bulleted lists. There are also structural modes to assist the readers’ better scan pages including: writing in the inverted pyramid style, using just one idea per paragraph, and using half the word count (or less) of conventional writing (Nielsen, 1997).

## 1.4 Conclusion:

This paper observed some of arguments that have been made both for and against the use of visual information and discovered that even though many researches were positive, results were mixed and further empirical research is required. The use of visuals ought to be based on research-based theory about how learners learn best with visual technology. Instructional development in this particular area should not be established on what computers can do, but preferably what learners can do (Mayer, 1997). This paper also studied at the work of Edward Tufte. His *Grand Principles* must aid and assist the analytical *thinking* of designers who operate these principles to analytical *design*. The paper summed up by investigating some tactics for using visuals in online setting. This investigation integrated looking at the work of Jakob Nielsen, a leading web usability expert. The aim of writing the paper was to investigate how efficient visual information can help instructional designers do well in setting up impressive learning atmosphere.

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