Augmenting Accelerated Learning through Disruptive Visual Works during Covid-19 Pandemic

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Abstract

Covid-19 pandemic came as a Disruption in the conventional knowledge dissemination as physical interaction between authors and receivers was severed overnight. During this scenario the role of Visuals increased in teaching and in co-creation of information dissemination sessions. Disruptive Visual Works (DVWs) needed to be put in practice to speed up the acceleration of dissemination and implementation at different levels for different participants by stimulating Visual Spatial Intelligence and Bodily-Kinesthetic Intelligence to encourage critical thinking, active participation and to co-create solutions for given scenarios. Digital preparation of the information in the virtual world allowed convenient use of such visual tools through application software like Miro, Mural, JamBoard and Lucid Chart. As part of the road map of digital learning, a visual thinking workshop was arranged in which 73 participants participated in the questionnaire put at the end of the workshop to understand the way forward while introducing self-drawn visual components. Workshop exposed participants behavior on the skills unlearned and challenges in rekindling Visual-Spatial Intelligence and Bodily-Kinesthetic Intelligence. To conclude it was found out that participants are aware of visual components in an activity but have hesitation to put it in practice and require encouragement to make the best use of it in accelerated learning.

Keywords— Bodily-Kinesthetic Intelligence, Cognitive Spheres, Disruptive Visual Works, Linguistic Intelligence, Visual Spatial Intelligence

I. INTRODUCTION

Covid-19 pandemic came as a Disruption in the conventional knowledge dissemination as physical interaction between authors and receivers was severed overnight. Prior to Covid-19, when we talked about information, we always focused on information in the form of text; rarely did we include visuals and pictures in the same. But Covid-19 brought an overnight change and wherever we looked around whether it is on the streets, screens or on the web, visuals became the primary source of communication. Textbooks and digital learning platforms now a day have a lot of images to help the learners understand the concepts better and faster. Facilitators also use different visual facilitation methods for understanding new concepts faster & better and for co-creation of solution incorporating visual thinking [1].

If we talk about information literacy in the pre Covid-19 era, the use of visuals as the primary source of knowledge transfer through different mediums to invoke Visual Spatial Intelligence for interpretation and execution of given scenario was in practice and was in practice Bodily-Kinesthetic Intelligence to increase participants level of involvement to increase co-creation quotient [2]. As it is said that when we study only from text/hear we are able to retain around 10% of the total, whereas when study the information through visuals it increases up

to a total of 35% and when we use a combination of text and visuals to study the same information, we are able to retain to a maximum of 55% but if one does that activity physically he/she remembers it for lifetime as said by Confucius and shown in Figure 1.
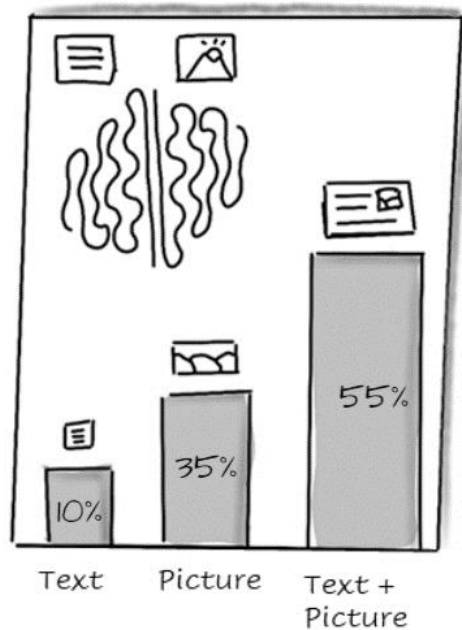

Figure 1: Memory Retention from Different Forms

The concept of information literacy and its relationship with visuals and pictures has received very little attention in the field of professionals in the past few years. Supporting and promoting the concept of visuals and learning possibilities, it is said by James W. Marcum that "to separate visual information from traditional alphabetic information is shortsighted when considering the opportunities provided with advancing technology." In the traditional textual learning culture, where very few visuals were being used and more text was being used, Covid-19 situation changed its way into favor of growing visual learning culture. Way back Marcum said, in "Beyond visual culture: the challenge of visual ecology" that "information must be transformed into multimedia-based services to grasp the ephemeral but omnipresent interactivity, to perceive the totality of today's visual ecology, and to manage continuous media that today's culture will not be lost" [3]. In the last decade

action on these lines was being taken all over the world and most of the learning centers had open access to digital devices to enable growth of visual ecology but Covid-19 forced institutions to put in the practice overnight.

When we talk about information literacy it is not defined as conflicting in relation with other form of literacies like numerical, digital, health, financial and media literacy [4]. Furthermore, information literacy is not limited to only a certain type of organizations or facilities, people using information literacy should have an open mind to new types of technologies being introduced, adapt to these changes, and move forward. Covid-19 forced acceleration of learning of various digital platforms like Zoom, Google Meets, Miro, Mural, JamBoard, etc. by the authors and receivers both.

As said by Gardner, the linguistic intelligence consists of the ability to use words and express to other different concepts and thoughts through them, whether oral or written [5]. Most of the learning practices are based on this dictum for last 5 centuries. The new world order on learning through digital medium has more leaning towards application of Visual-Spatial Intelligence. Facilitators involved in learning and co-creative activities are introducing Disruptive Visual Works (DVWs) at different scenarios wherever possible, although it has yet to make its space among the textual worlds.

If the learning has to be retained as lifetime experience, then Bodily-Kinesthetic Intelligence based activities can facilitate the same, as Bodily-Kinesthetic Intelligence is based on the principles of using hands, heart, and mind (Figure 2) i.e. using gross and fine motor skills, doing activity with lot of energy and using personal and other person's experiences in execution of the activity [6]. A few of the DVWs involve Bodily Kinesthetic Intelligence activities for the learners so that impact of the learning lasts forever.

Covid-19 situation demanded new ways to interact and enhance interpersonal intelligence of the individuals. Learners were no more in physical line of sight of the authors but had digital eyes through video cameras for

communication purpose. Though environment at home at both ends were not as conducive as could be the physical classroom, stakeholders made improvisations in their presentations, learnt use of digital white boards, asking questions or quizzes through chat rooms, and moved on.
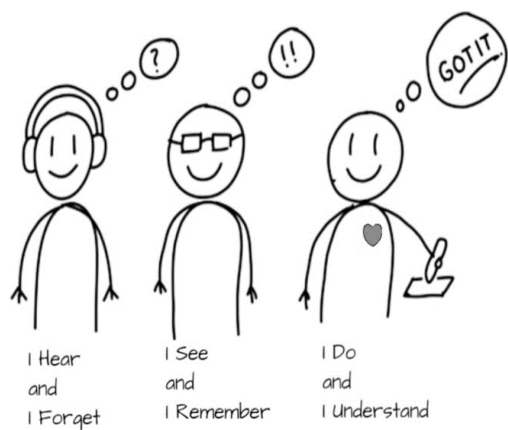

Figure 2: Bodily-Kinesthetic Intelligence

II. DISRUPTIVE VISUAL WORKS IN THE LEARNING PROCESS

Bringing DVWs in practice made its case little more difficult in Covid-19 era which was earlier also not that easy and couldn't be done in a day. However, if the introduction is based on the concept of Lewin's change model which is Unfreezing, Movement and Refreezing [7], it may create the pathway for the change desired. New forms of DVWs are now becoming a part of the learning process of the world at an ever-increasing rate.

Disruptive Visual Works function as a helpful tool which is used by Facilitators and learners in understanding on how information is constructed and can be shared in a better form. When faced with Linguistic Intelligence, individuals are dealing with alphabetical images, as words can also be defined as alphabets which are combined to bring out a sound. The same way when we talk about Visual-Spatial Intelligence and DVWs, DVWs are also brought in together to bring out an image corresponding to that word making it easier for the individuals to remember it in future.

III. IMPLEMENTATION OF DVWS IN VICKERY'S MODEL OF INFORMATION TRANSFER

Vickery's Interpersonal information work is based on three components, the first being science which helps us to understand the problem, second being the technology which will be used to solve the problem and third being the art of participation [8]. The outcome 'triple glow' of information work is directly influenced by the tools used for interpersonal communication. This is the stage where DVWs can play an important role in enhancing the luminescence of information work (Figure 3).

Covid-19 brought in that opportunity to introduce DVWs in the most innovative way, platforms like Miro, Mural and JamBoard etc. filled that need. They gave the opportunity to recall interaction between author and receivers in digital and physical formats beyond the confine of physical interaction space in pre Covid-19 era.
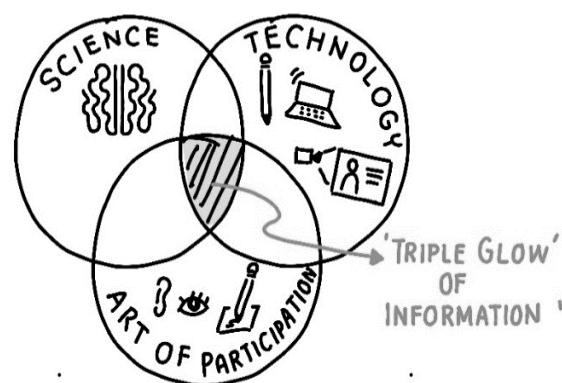

Figure 3: Venn Diagram Showing "Triple Glow" of Information Work

While elaborating information transfer, Vickery states that when textual messages are used there will be variation in the information work from person to person even though the same process is used to for passing of the information. The retention and recall of the information increase when the receiver is further supported to remove the disparities in information transfer. DVWs can play that role by supporting the author (sender) of the information.

Lower feedback can be altered by the author (source) to remove the disparities considering who the knowledge seekers (receiver) are.

Upper feedback loop has potential to use DVWs to influence the relay of information, what could be the appropriate catalyst for enhancing the flow of information could be built in a collaborative way by the visual facilitator. Images could be added to the verbal or textual message for the interference of the message (Figure 4).

Science and technology can help here in dissemination of images either in real time or as supplement to post message processing. This opens numerous opportunities to introduce DVWs in lower and upper feedback loops of information transfer process.
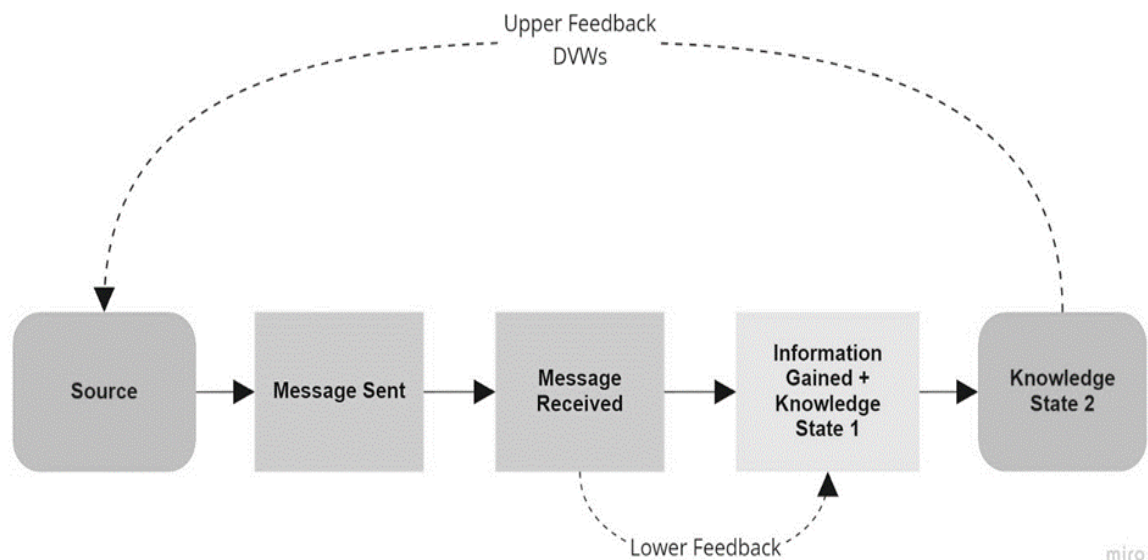
Figure 4: Vickery's Model of Information Transfer

IV. VISUAL MAPPING

Visual mapping is one of the first few teaching and learning strategies to which an individual is exposed where depiction of relation between things, time or ideas is introduced. Visual Map construction or visualization initiates a thinking process to explore relations between image and text, and this model is different from the mentioned earlier.

As visual mapping is more of an exploratory process, it encourages individuals to consider all the parameters which could be relevant to the core subject being explored. Visual maps could be a simple line with dots/circle representing a timeline or steps. It could also be a very complex one with core subject under discussion in the center and various nodes and sub nodes connecting to it and representing all the possible topics/relations.
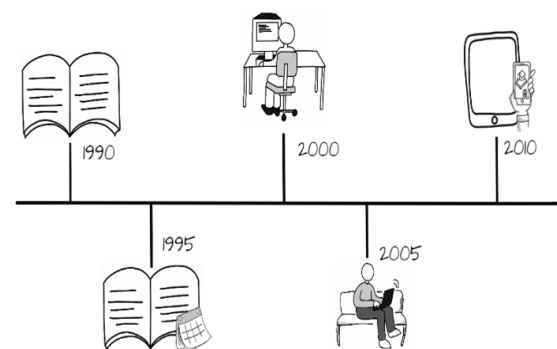
Figure 5 is an example of visual map:

Figure 5: Timeline of Evolution of Education Mediums

Role of a receiver (reader) in a complex visual map is to see that all the components which could be text or visual are tied to the core subject under study. In the above shown visual map author has tried to explain Gardner's Theory of Multiple Intelligence with the help of various components and subcomponents associated with it in a single source (Figure 6).
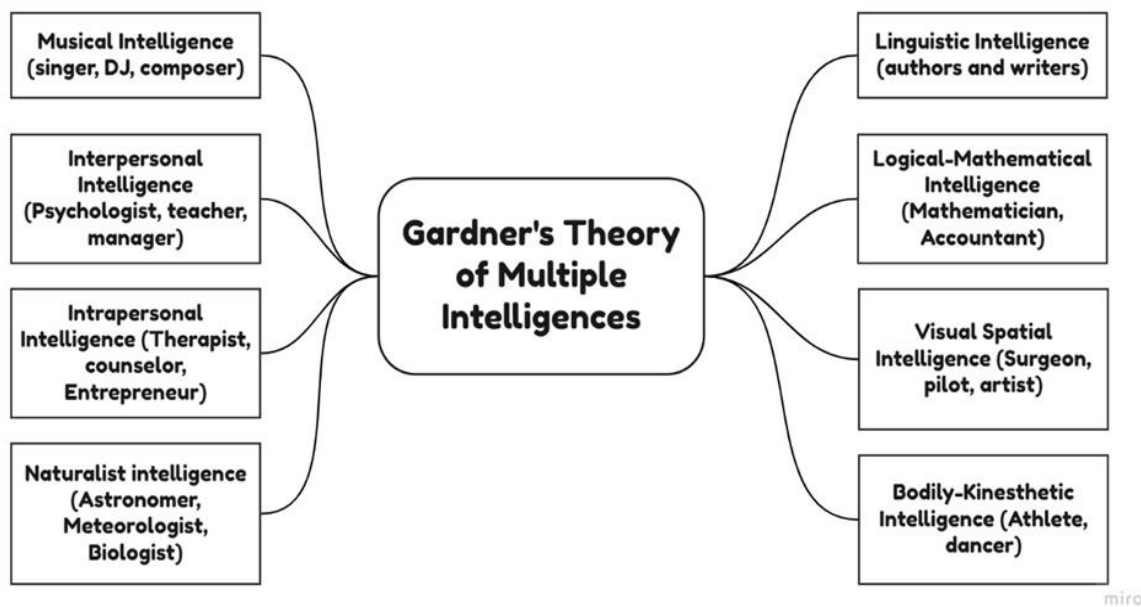
Figure 6: Mind Map of Gardner's Theory of Multiple Intelligence

Such a visual map necessitates that all the parts are taken care of, a teacher or student can focus on each part individually to shape the information reception. He or she can think on how the text format or visual components are represented and how can individually overcome the tunnel vision reading.

Digital preparation of the information in present scenario allows convenient use of such visual maps through application software like Miro, Mural, JamBoard and Lucid Chart. Author and reader both can explore such digital visual tools in collaborative way also where participants could be at remote locations.

These digital versions also allow the flexibility where author can delegate editing, commenting, or viewing only rights to the participants. Also, he or she can give it a shape of a survey or time bound responses for interactive participation challenging multiple intelligence of an individual. However, as these applications usage is the nascent stage, a greater awareness of such digital visual tools is required.

V. OBSERVATION DURING VIRTUAL VISUAL THINKING WORKSHOP

Based on the information transfer and knowledge acquisition a survey was carried out among various professionals in different domains during virtual visual thinking workshop carried out during the period of Covid-19 in form of a questionnaire related to use of visuals in transmission and receipt of message and how visual metaphors can influence visual thinking. Participants were also asked how much comfortable they were in drawing of a visual using basic drawing elements.
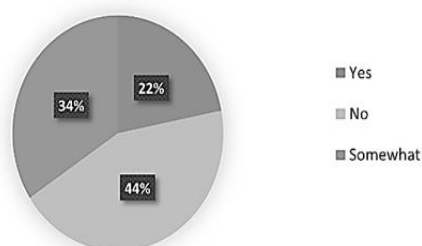
About 73 participants responded to the questionnaire and results indicated that 43% of them were not afraid of creating a visual, 80.8% of them were aware of how to create visual using basic drawing elements (shapes, lines, arrows, people), 67.1% of the participants acknowledged that their drawing skills were that of a beginner and 83.6% of them were aware that what a visual metaphor is and how it can be used to convey a situation differently but relatable to the actual scenario (Table 1 and Figure 7).
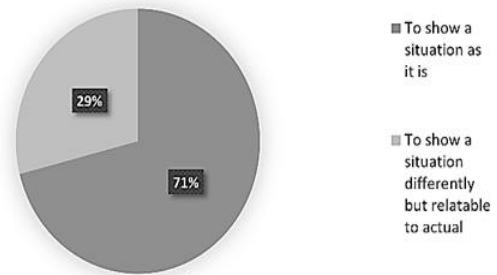
Table of Data (73 Participants)

Question	Response1	Response 2	Response 3
As a visual thinker, are you afraid of drawing ?	Yes (16, 21.9%)	No (32, 43.8%)	Somewhat (25, 34.2%)
Are you aware of basic drawing elements ? (Shapes, lines, arrows, people)	Yes (59, 80.8%)	No (8, 11%)	Somewhat (6, 8.2%)
As a visual thinker, your drawing is as of?	Beginner (49, 67.1%)	Intermediate (20, 27.4%)	Pro (4, 5.5%)
What is a visual metaphor?	To show a situation as it is (12, 16.4%)	To show a situation differently but relatable to actual (61, 83.6%)	-

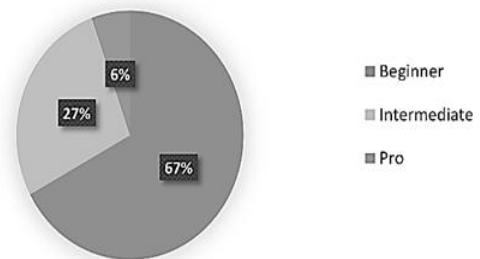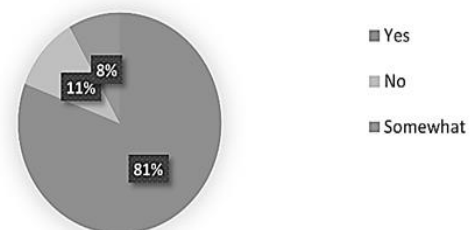*Table 1: Response to Questionnaire on Visual Thinking*

Figure 7: Graphical Representation of Data Collected

VI. CONCLUSION

A shift in information preparation, dissemination, and reception is the need of the hour which could be accelerated by incorporation of DVWs. Vickery's model of Information Transfer which focuses on transmission and medium of delivery has undergone sea change as it is not restricted only to the text or verb but has a greater component of visuals in it now. Kinneavy's communication triangle which focuses on the context creation needs to be agile, here text could be supported with visual for better understanding of the reality. Addition of visuals by the author in the message itself or insisting the recipients to draw

it in a collaborative way for better participation or to involve a scriber who can draw the visual in real time and bring all the stakeholders at a participative platform. The level of scribing could be sketchnoting, graphic recording, system scribing or generative scribing. This multi model character of contemporary information (message) will bring the paradigm shift in learning and development.

As observed in the survey conducted by the author though visual/drawing is an essential component of learning in elementary stage but gets obliterated during adulthood. Encoder and decoder need to understand that purpose of visual/drawing is to act as catalyst in the deciphering of the information at faster pace hence visual/drawing should not be put under judgmental eyes. Instead, even a visual or drawing created with simple shapes (line, circle, square, triangle, polygon, callouts etc.) shall be encouraged for in-depth information (message) delivery.

As the information is no more limited to verbal or alphabetic, integration of the visual/drawing in the message is the need of hour where technology is playing the key role. Researcher can now isolate the text, images, or videos while doing web searches on any topic. Strategies need to be made to add elements to the information (message) while continuing the work in changing environment. Addition of element could be done in one session or multiple sessions.

While making connections between components of the information, the emphasis must be on the discourse being such that participation of attendees is maximum and has their maximum attention. Shift in practice must keep pace where it can influence the decoder (receiver). For this very consideration DVWs or similar other influencers of multiple intelligence need to be incorporated in information delivery for the benefit of the receivers.

VII. CONFLICT OF INTEREST

The authors declare no conflicts of interest.

REFERENCES

1. TRUCH, S., 2014. THE ALMADINA/READING FOUNDATION DISCOVER READING©.
2. Guignon, A., 1998. Multiple intelligences: A theory for everyone. Education world, 16.
3. Anon., 2022. Co-creation workshop: Collective .. - SDG Global Festival of Action. [online] Available at: <https://globalfestivalofaction.org/class/co-creation-workshop-collective-intelligence-for-sustainable-development-getting-smarter-together/> [Accessed 18 January 2022].
4. Marcum, J.W., 2002. Beyond visual culture: the challenge of visual ecology. portal: Libraries and the Academy, 2(2), pp.189-206.
5. Anon., 2022. Types of Literacy – Gaspesie Literacy Council. [online] Available at: <https://gaspelit.ca/types-of-literacy/> [Accessed 22 January 2022].
6. Anon., 2022. Linguistic Intelligence: What It Is, Examples and How to Improve It . [online] Available at: <https://www.lifepersona.com/linguistic-intelligence-what-it-is-examples-and-how-to-improve-it> [Accessed 28 January 2022].
7. Logsdon, A., 2022. Bodily Kinesthetic Learning Style and Characteristics. [online] Available at: <https://www.verywellfamily.com/kinesthetic-learner-characteristics-2162776> [Accessed 28 January 2022].
8. Hussain, S.T., Lei, S., Akram, T., Haider, M.J., Hussain, S.H. and Ali, M., 2018. Kurt Lewin's change model: A critical review of the role of leadership and employee involvement in organizational change. Journal of Innovation & Knowledge, 3(3), pp.123-127.