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Exploring Sketchnoting as a Learning Concept in Nursing: Integrating Cognitive and Pedagogical Perspectives

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ABSTRACT

Sketchnoting is a creative and sequential process through which an individual can record their thoughts with the use of texts, symbols and structures. It does not require special drawing skills, but do require to listen and visually synthesize and summarize ideas by using writing and drawing. The notes translate visual and auditory, or written input into visual maps. These may contain mainly words placed in chunks on the page and then framed with varying containers, highlighted with color, connected through lines and arrows and do not necessarily require actual imagery. Sketchnote is integrated with the steps of planning, listening, processing and drawing. This paper of content makes us to reveal the fascinating experience of learning in nursing education. It encourages curiosity, fosters creativity, develops critical thinking and prevents boredom. The way the text, drawings, and other elements are arranged on the page is also a key component of sketchnotes, helping to guide the viewer's eye and create a clear visual hierarchy. Sketchnotes can be used as a pedagogical tool in various settings, including nursing education, other academic disciplines, conferences, meetings, and even for personal reflection. As it is a new innovative method, integrating this method into nursing education can significantly improve academic performance and professional competency.

Keywords: Sketchnotes, symbols, structures, visual, nursing education

INTRODUCTION

Visual learning is an educational approach that utilizes visual aids to convey information and enhance understanding. Incorporating visual aids and elements into teaching can make complex concepts more accessible. This method not only aids in understanding but also improves information retention, as learners can visualize and recall the material more effectively. Visual learning is particularly beneficial in subjects where spatial relationships and patterns are key, such as science and also mathematics. By presenting information through this way, the educators can facilitate higher-order thinking skills, enabling students to analyze and synthesize information more effectively. Combining visual methods with other instructional strategies can create a more inclusive and effective learning environment, catering to a broader range of learners. In general, the visual method can be categorized into visual-spatial, visual-linguistic, and visual-kinesthetics approaches, each of them is utilized with different visual aids and

techniques. Among these categories, visual spatial approach gives a more stimulative thinking through Sketch noting, which is a method of note-taking that combines with words and simple images to create visual summaries of information.

ORIGIN

In 2006, designer and an author named Michael Rohde felt that the traditional notetaking is stressful as he was unable to capture every detail. With that, he wanted to combine traditional note taking methods with doodling to create more memorable notes. After testing out this new technique, Rohde found that it helped him stay focused on the topic at hand, and his memory retention of his notes improved due to the illustrations and visual appeal. At first, Rohde labeled his notes as "sketchnotes" because his technique combined words and sketches to capture key ideas. He later found this word to be fitting, and naturally kept this term. After continuous practice, seven years later, Rohde published two books, (The Sketchnote Handbook and The Sketchnote Workbook to inspire others to try sketchnoting). Henceforth, Mike Rohde is widely considered the "father of sketchnoting".

Meaning of sketchnoting

Sketchnoting is the creative and graphic process through which an individual can record their thoughts with the use of handwriting, drawings, hand-drawn typography, shapes and visual elements like arrows, boxes and lines. It is also commonly referred to as visual notetaking. It can be used in a variety of settings and scenarios, such as at conferences, work meetings, classes in school, sporting events, and more.

Types of sketchnoting based on purpose and style

1. Concept Mapping:Visually organizing and connecting ideas, often used for brainstorming, research, and understanding complex topics. Uses boxes, circles, lines, arrows, and symbols to represent concepts and their relationships. Example: a character map from a novel.

2. Narrative Sketchnotes: Capturing a story or sequence of events through visual elements and minimal text. Includes characters, scenes, and key events, often with a focus on visual storytelling. Example**:** a movie plot, or a personal experience.

3. Event Sketchnotes: Documenting and summarizing information from a specific event, like a meeting, conference, or lecture. Includes key takeaways, important points, and visual cues to help recall information. Example**:** a church sermon, a customer service experience, or a meeting.

Elements of sketchnoting

- *Basic shapes* include basic structures such as rectangles, circles, and triangles. These can be used in substitution for the traditional bullet points. Combining these shapes could also create different figures to represent different information.
- *Containers* to group together similar ideas. Examples include thought bubbles, boxes, and banners.
- *Text* is traditional methods of note taking. An example of this is handwritten notes. Handwriting should be consistent and legible.
- *Emphasis text* is to make certain text and information stand out. This is commonly used for important concepts or headings. Text can be emphasized by adding a variation to existing handwriting, such as bolding, bubbling letters, or capitalization.
- *Connectors* can be used to connect related ideas to one another. Arrows, dotted lines, and paths can be used to connect one concept to another.
- *Icons and symbols* should be easy to draw and can be used as a visuals in notes.
- *Sketches and illustrations* is for illustrating analogies or metaphors in an artistic way.

- *Shading* can be used to add dimension and contrast.
- *Colors* are used to distinguish and differentiate the content of the notes. Color choices focus on clarity over aesthetics.

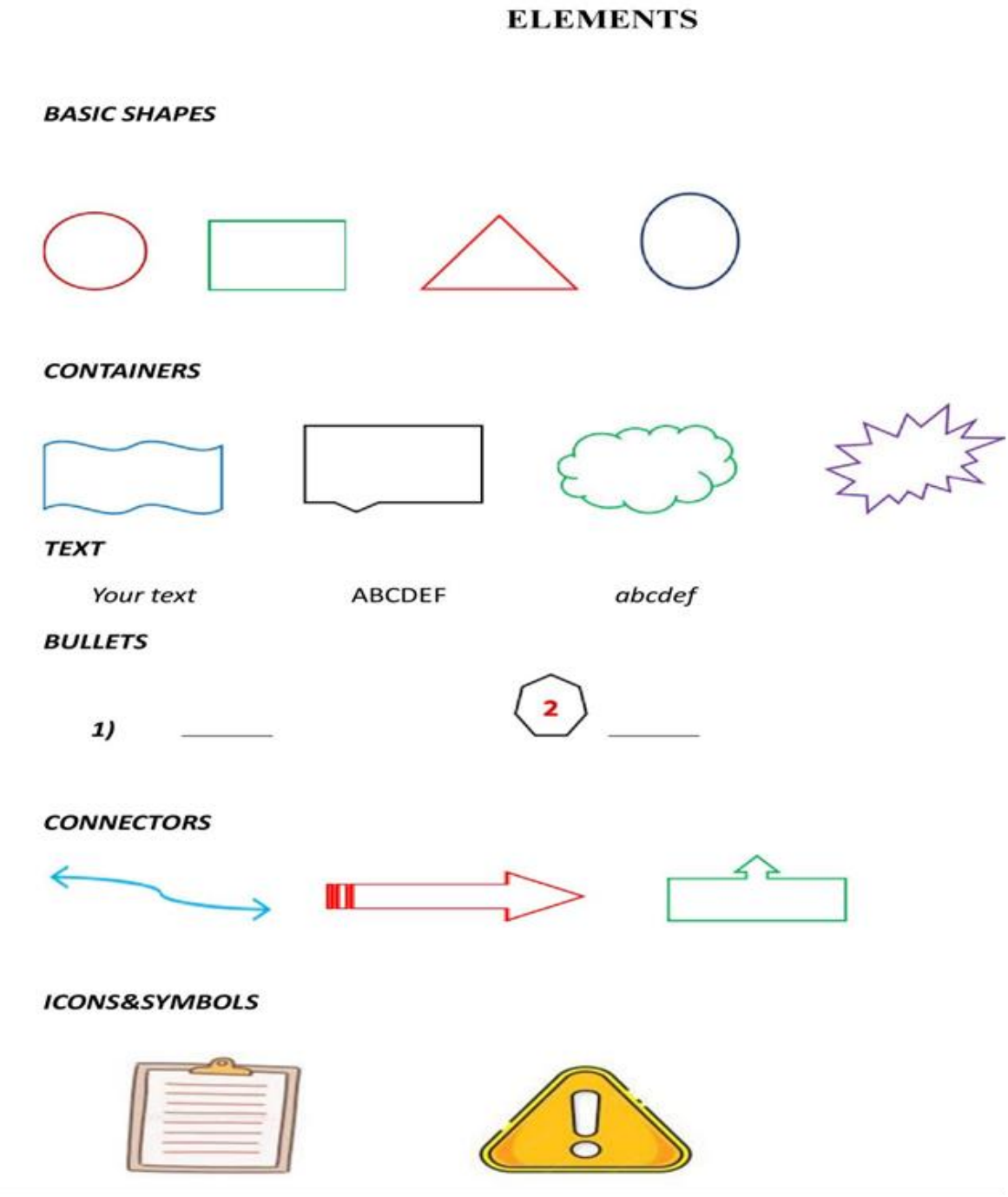

Figure 1: Elements of sketchnoting

Phases of Sketchnoting: From Planning to Visual Representation

1. ***Planning*:** The first step involves planning how to take notes and thinking about what components can affect the sketchnotes. Things to consider include notetaking materials, the agenda of the presentation, and the speaker.

2. ***Listening*:** The next step is to listen and pay close attention to the speaker. Things to listen for include quotes that summarize key ideas and important details.
3. ***Processing*:** After listening to the speaker, one starts processing the content and decides what should be noted. This step involves taking the time to make sense of the information captured in the moment before recording the content. The notes do not reflect everything said by the speaker, nor are they extremely comprehensive.
4. ***Writing*:** After processing the content and deciding what information is relevant, one begins writing these key ideas down. This is done quickly, while maintaining consistency and legibility.
5. ***Drawing*:** Illustrations and visual elements can be added to supplement written content.

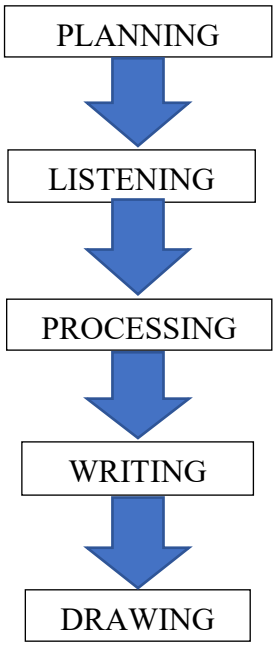

Figure 2: Phases of sketchnoting

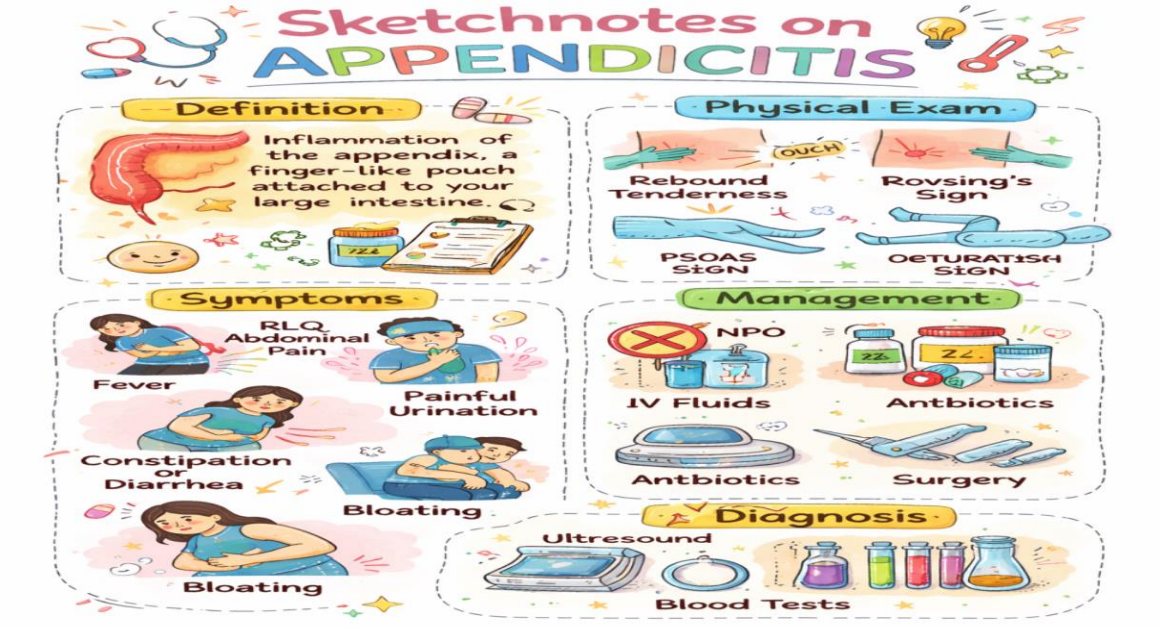

Figure 3: An example of sketchnoting

The Neurocognitive Pathway Activated During Sketchnoting

Hearing and writing are closely interconnected processes that involve multiple neural pathways. When a learner listens to an explanation, sound waves travel through the ear and are transmitted to the auditory cortex, where initial processing occurs. This auditory input then engages key language regions of the brain, including Broca's and Wernicke's areas, which interpret meaning, tone, and linguistic structure. Once the information is understood, the brain initiates motor planning and execution. Signals pass from the motor cortex through the spinal cord to the muscles of the arm, hand, and fingers, enabling the coordinated movements required to produce written or sketched notes. This integration of auditory, cognitive, and motor functions forms the basis of the sketchnoting process.

Key Advantages of Integrating Sketchnoting in Education

Our brains process information more effectively when it's presented in both visual and verbal forms, a concept known as "dual coding".

- Helps transfer information from short-term working memory to long-term memory, making it easier to access later.
- Engagement- Sketchnoting can make meetings more engaging. The act of drawing can keep participants focused and attentive.
- Clarity and Organization- Visual layouts can help organize information logically, making it easier to see connections between ideas.
- Creativity- Encourages creative thinking and expression. This can lead to new insights or solutions during brainstorming sessions.
- Quick Reference- Visual notes can be easier to skim for key points compared to dense text, allowing for quicker reviews later.
- Adaptability- Sketchnotes can be tailored to different types of meetings or audiences, making them versatile.
- Provides immediate clarification when the teacher explains or repeats.
- By actively visualizing information, sketchnoting enhances comprehension and understanding of complex concepts.
- Can make learning more enjoyable and engaging, leading to increased motivation and retention.
- Engaging in visual expression, like sketchnoting, can activate the brain's reward pathways, leading to feelings of well-being and reduced stress

LIMITATIONS

- ***Time-Consuming***- Creating sketchnotes can take longer than writing text-only notes, especially for those not experienced in drawing.
- ***Distraction***- Focusing too much on the visuals can distract from the content being discussed, leading to missed information.
- ***Limited Detail***- Complex topics may be oversimplified in sketchnotes, missing out on nuanced discussions that text can capture.
- ***Accessibility***- Visual notes may not be as accessible to those who prefer or require text-based formats, such as people with certain disabilities.

Evidence based reviews on improved memory and critical thinking through sketchnotes and picture drawing illustration

A qualitative, explorative, descriptive and contextual research was done with the participants (27 female and 2 male) fourth-year student nurses from a purposefully selected nursing education institution who work in psychiatric wards. Data were collected by means of three focus group interviews, as well as drawings and naive sketches of the participants' and the researcher's field notes. Tesch's method of open coding was used to analyse data. Ethical principles were observed and

trustworthiness was ensured. The results show that student nurses experience a range of challenges in the clinical psychiatric learning environment. However, through the use of drawings and naive sketches they come to an emancipated understanding of their growth and development capacity.

In this study they provide a methodology and implementation strategy of Sketchnoting in Freshman Engineering and Technological Literacy classes. The objective is to improve students' learning, visualization, and communication proficiencies, as well as to foster advancement in knowledge retention, and critical thinking. This study provides the motivation, supporting research background, design, and the first set of results of this new approach implemented in engineering and design curriculum.

A study conducted among nursing students in Saveh investigated the impact of these techniques on divergent thinking. Using Peter Honey's Divergent Thinking Questionnaire, the researchers observed that students who participated in computerized group drawing and conceptual diagram activities demonstrated significant improvement in their divergent thinking abilities. Repeated measures ANOVA revealed a consistent upward trend in divergent thinking scores immediately after the intervention and one month later, while no meaningful change occurred in the comparison group ($P < 0.0001$). The findings suggested that instructional methods grounded in active participation, visualization, and collaborative creativity can positively influence cognitive outcomes in nursing education.

This paper is a reflective account of using Sketchnotes both within Academic Practice and as a PhD Student. A brief summary of different types of Sketchnotes is discussed, together with details of how these have been used in practice, and evolved through practical experience. Creating Sketchnotes have enabled an understanding of thought processes and facilitated open communication to others in terms of PhD research. Sketchnotes have also helped with retention of information and engagement. Through incorporating Sketchnotes into everyday practice, this has fostered connections with others and enabled communication of complex ideas visually. This reflective piece contributes to insights and deepens understanding in the area of visual representation in learning and teaching.

Studies employing visual elicitation methods, such as the draw-a-picture technique, alongside analytical approaches like Epistemic Network Analysis (ENA), have revealed notable distinctions between practicing nurses and students. Nursing staff consistently exhibit higher motivation to engage with smart technologies, a finding attributed to their direct exposure to technological systems in daily clinical workflows. Research also indicates that both groups commonly recognize similar technological applications in disease prevention, assessment, and nursing activities, yet their conceptual grounding diverges.

Within this literature, social semiotic and Systemic Functional Multimodal Discourse Analysis frameworks have been widely applied to examine how visual thinking transforms specialized knowledge. Studies show that multimodal representations support resemiotization—the process of transforming meaning across different semiotic modes—allowing abstract scientific and mathematical concepts to be reformulated into more concrete, observable, and intuitive forms. Research further demonstrates that the compositional arrangement of multimodal texts plays a critical role in structuring scientific arguments and guiding viewer engagement. Elements such as spatial organization, schematic drawings, simplified figures, and selective retention of mathematical symbolism work together to create coherent conceptual summaries. These multimodal strategies enable the translation of complex disciplinary knowledge into accessible visual narratives, positioning visual thinking

as a culturally informed communicative practice that bridges expert discourse and broader audiences.

This study is to examine the effectiveness of Sketchnotes in design-related disciplines suggest that incorporating visual note-taking can enhance students' cognitive performance by transforming abstract concepts into clear, accessible representations. Research indicates that Sketchnotes contribute to improved motivation, creativity, and active engagement, particularly within courses that require conceptual reasoning and problem-solving, such as design decision-making. Findings consistently point to the value of visual-verbal representations in helping learners organize information, form conceptual connections, and achieve deeper learning. This multimodal technique has been shown to support knowledge retention, information retrieval, and meaningful understanding of course content.

CONCLUSION

Using sketchnoting alongside regular text and picture only notes can enhance understanding and retention for all individuals.Sketchnoting has emerged as an effective multimodal strategy that strengthens learners' comprehension, memory, and engagement across diverse educational contexts. By integrating visual elements with concise verbal information, Sketchnotes promote deeper processing, enhance conceptual clarity, and support the organization of complex ideas. The literature consistently demonstrates that visual note-taking not only improves cognitive outcomes but also fosters creativity and active participation. As a learner-centered method, Sketchnoting offers a meaningful approach to enriching teaching practices and improving overall learning performance.

Declaration by Authors

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