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Design Psychology and Educational Imagery: Exploring Visual Communication and Youth Motivation in Thailand's Learning Environment

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ABSTRACT

This qualitative study explores how visual communication, guided by principles of design psychology, affects youth motivation and learning engagement in Thai educational settings. With a growing reliance on visual materials in classrooms, especially in the digital age, understanding students' emotional and cognitive responses to educational imagery has become critical. The research investigates how design elements such as colour, clarity, cultural relevance, and emotional tone influence students' learning experiences and how teachers apply or overlook visual design principles in practice. Using semi-structured interviews (n = 30 students, n = 10 teachers), focus group discussions, and visual elicitation methods across secondary schools and universities in Thailand, the study adopted thematic analysis to extract patterns from participants' narratives. Four major themes emerged: emotional resonance and aesthetic design; cultural identity and localized imagery; visual clarity and cognitive load; and teacher awareness and visual integration practices. Students reported greater engagement and intrinsic motivation when exposed to visually appealing, culturally relevant, and cognitively simple learning materials. Conversely, cluttered or foreign-based visuals created disinterest, confusion, or detachment. Teachers showed varied levels of visual literacy, with most acknowledging a lack of training in effective visual communication. The findings underscore the need to incorporate design psychology into teacher education, curriculum development, and instructional practices in Thailand. Educational visuals are not merely supplementary they are central to activating attention, shaping emotions, and reinforcing identity in the learning process. The study concludes with recommendations for fostering culturally responsive, visually engaging, and emotionally intelligent classrooms that support holistic student development in the 21st-century Thai context.

Keywords: Design Psychology, Educational Imagery, Visual Communication, Youth Motivation, Learning Engagement, Thailand, Qualitative Research, Student Experience, Teacher Practices

I. INTRODUCTION

In an era increasingly shaped by digital and visual media, the importance of effective visual communication in education cannot be overstated. Today's students are digital natives, immersed in a constant stream of images, videos, icons, emojis, and info-graphics. Within this evolving media environment, visual elements have become a powerful tool not just for entertainment or social interaction, but also for instruction and cognitive development. As such, the role of design psychology how aesthetic and spatial elements influence human behaviour and learning has become a central concern for educators, curriculum designers, and policymakers worldwide (Norman, 2004; Clark & Lyons, 2010). In the context of Thailand, where rapid digitalization is transforming the educational landscape, visual learning materials are increasingly integrated into teaching at both secondary and tertiary levels. The Ministry of Education's push for smart classrooms, online learning platforms, and multimedia-enhanced instruction signals a growing recognition of the power of visuals in supporting student engagement (Office of the Education Council, 2023). However, despite technological advancements, many Thai students remain disengaged due to visuals that are poorly designed, culturally irrelevant, or cognitively overwhelming (Wattanatorn & Chansirisira, 2018). Design psychology offers an analytical lens through which to assess and improve educational visuals. It explores how learners emotionally and cognitively respond to elements like color, contrast, layout, and symbolic imagery (Norman, 2004; Lohr, 2008). When visuals are emotionally resonant, aesthetically pleasing, and cognitively clear, they can enhance attention, reduce anxiety, and foster deeper motivation (Moreno & Mayer, 2007). Conversely, visuals that are overly complex, culturally disconnected, or visually dull can impede comprehension and demotivate learners.

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This concern is particularly acute in Thailand's multicultural and linguistically diverse society. Culturally responsive pedagogy (Gay, 2010) emphasizes the importance of integrating local traditions, symbols, and visual narratives into learning materials. When students encounter familiar visual cues such as traditional Thai festivals, foods, architecture, or landscapes they experience a greater sense of belonging and engagement (Siriwan & Watcharapong, 2019). On the other hand, foreign or Westernized visuals often fail to connect, creating a psychological distance between the learner and the content. In addition, cognitive load theory (Sweller, 1994) highlights the need for visuals that are not only attractive but pedagogically efficient. Learning is compromised when students must expend mental energy deciphering poorly organized or irrelevant visual stimuli. Therefore, it is critical that educational visuals are designed to minimize extraneous load while maximizing germane cognitive processes.

Given this context, the current study investigates how Thai students and teachers perceive and interact with educational visuals through the lens of design psychology. It seeks to explore the emotional, cognitive, and cultural dimensions of these visual experiences, and how they affect youth motivation and classroom engagement. By focusing on both student experiences and teacher practices, this research aims to bridge the gap between visual design theory and real-world classroom application in Thailand.

Theoretical Framework

This study draws upon four major theoretical models: The central aim is to understand how design psychology and educational imagery influence student motivation and learning engagement, particularly in the Thai educational context. To frame this investigation, the study draws upon the following interrelated theories:

1. **Design Psychology**
2. **Self-Determination Theory (SDT)**
3. **Cognitive Load Theory (CLT)**
4. **Culturally Responsive Pedagogy (CRP)**

These theories collectively help explain how visual learning materials shape emotional, cognitive, and cultural dimensions of student engagement.

Design Psychology

Design Psychology examines how aesthetic, spatial, and visual elements affect human emotions, cognition, and behaviour. In the context of education, it refers to the psychological responses learners have to the design of instructional materials, especially visual content (Norman, 2004). The central assumption is that design is not neutral it communicates values, evokes emotion, and impacts how information is processed.

Don Norman's Emotional Design Theory is particularly relevant here. Norman identifies three levels of design impact:

- **Visceral** (initial sensory reactions)
- **Behavioural** (ease of use, effectiveness)
- **Reflective** (emotional meaning, cultural value)

Educational imagery that is pleasing, culturally familiar, or emotionally expressive can enhance learning by improving attention, reducing anxiety, and increasing motivation.

In Thailand, where visual aesthetics and symbolic representation are deeply embedded in culture (e.g., Buddhism, traditional art, language), design psychology provides a powerful lens to understand how students respond to imagery emotionally and behaviourally. For the current study Design psychology explains the aesthetic and emotional engagement Thai students experience when exposed to educational visuals. It also informs the way teachers conceptualize visual content whether they prioritize beauty, clarity, or emotional tone.

Self-Determination Theory (SDT)

Self-Determination Theory; Ryan & Deci (2000) is a motivation theory that emphasizes three basic psychological needs:

- **Autonomy**: The need to feel control over one's learning
- **Competence**: The need to feel capable and effective
- **Relatedness**: The need to feel connected and culturally validated

SDT posits that environments which fulfil these needs enhance intrinsic motivation and learning engagement. In relation to educational visuals: This theory claims that autonomy is supported when students can interpret or interact with visual content in meaningful ways. Competence increases when visuals clarify abstract content, helping students understand and retain information. And Relatedness is enhanced when visuals reflect the students' cultural backgrounds, social realities, and shared symbols.

This theory is particularly relevant in Thailand, a collectivist society where relatedness and cultural harmony are integral to motivation and learning. SDT helps interpret how Thai students feel "seen" or "ignored" through visual content. When visuals align with their identity and learning needs, students report greater engagement. When visuals are disconnected from local context (e.g., Westernized, text-heavy, or foreign), they feel disengaged or excluded.

Cognitive Load Theory (CLT)

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Cognitive Load Theory; Sweller (1994) suggests that learners have limited working memory capacity, and instructional materials must be designed to optimize cognitive processing. CLT identifies three types of cognitive load:

- **Intrinsic Load**: Complexity of the content itself
- **Extraneous Load**: Poor instructional design (e.g., cluttered visuals, irrelevant images)
- **Germane Load**: Cognitive processes directly related to learning (e.g., integrating visual and verbal information)

Effective visual design minimizes extraneous load and enhances germane processing by presenting information in a simple, clear, and structured format. In the Thai classroom context, where many students face language barriers and lack exposure to modern digital visuals, the cognitive burden can be high. Visuals that are overly complicated or irrelevant may hinder learning. CLT helps evaluate how students respond to visual complexity and clarity. Findings about students' preference for clean layouts, color-coded diagrams, and one-idea-per-slide visuals directly relate to cognitive load principles.

Culturally Responsive Pedagogy (CRP)

Culturally Responsive Pedagogy; Gay (2010) advocates for integrating students' cultural backgrounds into the teaching process to make learning more meaningful, inclusive, and motivating. CRP emphasizes:

- The use of culturally relevant content and symbols
- Recognition of students' linguistic and ethnic identities
- Teaching methods that respect community values and worldviews

Visuals that incorporate local imagery, Thai traditions, language, or community narratives affirm the students' cultural identity and increase motivation.

In Thailand, where many students come from rural or ethnically distinct backgrounds, using localized and culturally attuned visuals is key to fostering inclusivity. Standardized or Western-centric visuals often fail to connect with learners in meaningful ways. CRP frames the finding that culturally familiar visuals enhance students' sense of belonging and interest. Conversely, the absence of localized content in visuals alienates students, especially in lower-resource schools.

Integrative Framework

The study integrates the four theories as follows:

Theory	Focus	Contribution to This Study
Design Psychology	Emotional & aesthetic response	Explains student reactions to visual design and emotional engagement
Self-Determination Theory	Motivation & psychological needs	Frames student motivation based on autonomy, competence, and relatedness
Cognitive Load Theory	Mental processing & memory load	Interprets student responses to clarity and complexity of visuals
Culturally Responsive Pedagogy	Cultural identity & inclusivity	Addresses the importance of local context and visual cultural relevance

Together, these theories form a comprehensive lens for analyzing how visual design beyond content alone shapes youth learning, emotional engagement, and identity in Thai classrooms. The theoretical framework combines visual, psychological, cognitive, and cultural perspectives to understand how educational imagery affects Thai students' learning engagement. Design Psychology and Cognitive Load Theory explain the aesthetic and mental processing of visuals. Self-Determination Theory and Culturally Responsive Pedagogy explain how emotional and cultural alignment fosters motivation and participation. This integrated approach positions the study within an emerging field of educational design research that is both emotionally aware and culturally grounded, offering practical implications for curriculum developers, teachers, and policymakers in Thailand and other Global South contexts.

Problem Statement

While visual content has become a staple in educational material, the pedagogical effectiveness of such visuals often goes unquestioned. In Thailand, despite significant investment in digital classrooms, smart boards, and e-learning modules, students still report low engagement and lack of motivation in many classes (Office of the Education Council, 2023). Traditional teaching methods often persist,

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and when visuals are used, they may be either generic, poorly designed, or disconnected from the learners' context. Moreover, there is limited research within Thailand that examines how students *feel* about the visual components of their learning environment. Do certain colors, formats, or styles enhance their attention? Do culturally relevant visuals make them feel more connected to the material? Are they more motivated by visual storytelling or by minimalist diagrams?. Without a deeper understanding of these dynamics, educators may continue to use imagery in ineffective or counterproductive ways. This study addresses this gap by exploring the lived experiences of Thai students and teachers in relation to educational visuals, focusing on the intersection of design, emotion, and engagement.

Research Objectives

This qualitative study aims to:

1. Explore how Thai students perceive and emotionally respond to different types of educational imagery and visual communication.
2. Examine how visual design influences youth motivation and engagement in classroom learning.
3. Investigate how design psychology principles are (or are not) being integrated into Thai educational settings.
4. Provide recommendations for improving visual content in educational materials based on students' lived experiences.

Research Questions

The study is guided by the following key research questions:

- How do students in Thailand emotionally and cognitively experience visual content in educational settings?
- What kinds of educational imagery foster or hinder student motivation and learning engagement?
- How do teachers understand and implement visual communication principles in classroom instruction?
- In what ways can design psychology inform future educational practices in Thailand?

II. LITERATURE REVIEW

This chapter presents a synthesis of scholarly literature relevant to five interconnected areas central to this study: design psychology, educational imagery, visual communication, youth motivation, and learning engagement. Each concept is explored through theoretical and empirical lenses, particularly focusing on their relevance to educational contexts and youth learning in Thailand. The chapter concludes by identifying gaps that justify the current qualitative investigation.

Design Psychology in Learning Environments: Design psychology explores how environmental and visual design influences human perception, cognition, and behavior (Norman, 2004). Within educational settings, design psychology focuses on how factors such as color, layout, spatial arrangement, and visual hierarchy affect student mood, attention, and memory retention. Barrett et al. (2015) demonstrated that classroom design could account for up to 16% of the variation in academic progress among students. Elements such as lighting, color temperature, and wall displays had measurable effects on student engagement and motivation. In the Thai context, classrooms often lack these design optimizations, particularly in underfunded public schools.

Thai studies like Chaiyo & Nokham (2020) emphasize the need for "emotionally intelligent classrooms" environments that consider students' sensory and emotional responses. Aesthetic simplicity, color contrast, and culturally familiar imagery can evoke positive emotions and create a sense of safety and curiosity. Thus, applying design psychology in Thai schools could enhance not just physical spaces, but the cognitive-emotional engagement of students.

Educational Imagery and Cognitive Development: Educational imagery refers to visuals used for pedagogical purposes such as diagrams, illustrations, infographics, and animations. According to Mayer's (2009) Cognitive Theory of Multimedia Learning, people learn better when information is presented both verbally and visually because it engages dual processing systems (verbal and visual). However, the effectiveness of imagery depends on relevance, simplicity, and cognitive load. Well-designed educational visuals can help students organize knowledge, make abstract concepts concrete, and improve memory retention (Moreno & Mayer, 2007). However, irrelevant or overly complex visuals may hinder learning through distraction or overload a principle known as the coherence effect. Thai classrooms increasingly incorporate educational imagery, particularly through digital slides and online content. Yet, as reported by Wattanatorn & Chansirisira (2018), much of this visual content is poorly localized often copied from foreign sources and lacking cultural or linguistic relevance. This disconnection may limit students' motivation and comprehension, particularly in rural areas.

Visual Communication and Youth Learning: Visual communication refers to the conveyance of

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ideas through visual elements such as icons, color, shapes, spacing, and composition. It overlaps with educational imagery but includes broader design strategies like poster layouts, mobile learning apps, and classroom signage. For youth especially "digital natives" born into a multimedia ecosystem visual fluency is critical. According to Prensky (2001), today's students are attuned to fast, visually rich content; thus, instructional design must evolve to match their cognitive expectations. Young learners respond to emotional triggers, narrative visuals, and high-quality design more readily than traditional blackboard instruction. Thai youth, familiar with TikTok, YouTube, and LINE, are often disengaged by static or text-heavy visuals in school (Saengpassa, 2020). A growing body of Thai research emphasizes the importance of culturally relevant visual storytelling in lesson delivery. For instance, Siriwan & Watcharapong (2019) found that students were more motivated when materials included locally known characters, humour, and visual metaphors from Thai folklore and media. Thus, visual communication in Thai education must be not only technically effective but emotionally and culturally resonant.

Youth Motivation and Psychological Engagement: Youth motivation is a key determinant of educational success. According to Self-Determination Theory (SDT) by Ryan and Deci (2000), intrinsic motivation is fostered when learners experience autonomy, competence, and relatedness. Educational visuals, when designed well, can support all three dimensions.

Visually engaging content can:

- Provide clarity (enhancing competence)
- Offer learner-driven exploration (supporting autonomy)
- Represent student culture and identity (enhancing relatedness).

Studies by Sinsupa et al. (2021) and Panich (2019) in Thailand reveal that visual storytelling, colour use, and emotionally positive imagery significantly increase student interest, time-on-task, and classroom participation. Conversely, visual monotony or irrelevant aesthetics can lead to disinterest or cognitive fatigue. Yet, most Thai public schools still rely on slide presentations or textbooks that are visually out-dated and uninspiring. This disconnects between student expectations and classroom reality contributes to motivational gaps, particularly among at-risk or low-achieving students.

Learning Engagement through Visual Elements: Learning engagement refers to behavioral, emotional, and cognitive investment in learning activities (Fredricks et al., 2004). Visuals contribute to all three aspects:

- **Behavioural:** Capturing attention and prompting interaction.
- **Emotional:** Eliciting curiosity, enjoyment, or empathy.
- **Cognitive:** Aiding comprehension and triggering critical thinking.

Empirical evidence shows that when visuals are integrated with pedagogical intent, students are more likely to participate in discussions, remember material, and apply concepts to real life (Clark & Lyons, 2010). In Thailand, emerging practices like digital storytelling and interactive visual boards are showing promise, especially in private or international schools. However, few studies have explored how students subjectively experience visuals how they interpret, feel about, and connect with imagery on a psychological level. Qualitative investigations are needed to capture these experiences and translate them into design guidelines for Thai educators.

Gaps in Existing Literature

Despite the growing global interest in educational visuals and design psychology, several significant gaps persist within the Thai educational research context. Much of the existing literature is primarily quantitative in nature, which limits the ability to capture the subjective, emotional, and lived experiences of students. There is also a noticeable lack of integration between theoretical insights from design psychology and their practical application in classroom settings. Moreover, the cultural dimension of visual communication remains underexplored, with minimal attention paid to how Thai students interpret and respond to imagery rooted in their own cultural context. To date, no comprehensive qualitative studies have investigated the emotional and motivational impacts of educational visuals on Thai learners.

III. METHODOLOGY

Research Design

This study adopted a qualitative and an interpretive research design that the proposition of the present research study uses in order to explore the significance of educational visuals that are informed by design psychology in relation to the motivation and engagement of youth in Thai classrooms. Because human perceptions of vision stimuli are not simple or objective, it is best to utilize a qualitative design in order to elicit emotional reactions, sense-making, and life experiences (Creswell & Poth, 2018).in addition, this study followed exploratory and a descriptive research technique aimed not only to establish whether or not visuals are effective but

also produced insights that how and why students and teachers perception of such visuals occur in given cultural and educational environments. Interpretive paradigms focus on construction of reality through the social aspect and are especially applicable in the research based on aesthetics, emotions, and cultural meaning (Merriam & Tisdell, 2016).

Participants and Sampling

As the major participant cohorts, the present study included two groups, i.e., students and teachers. Thirty students (ranged between 15 and 22 years old) were recruited in the secondary schools and universities located in Bangkok, Chiang Mai and Nakhon Ratchasima. Also, 10 teachers, who were experts on visual arts, general education or ICT-related subjects, took part in the study. The sample chosen was heterogeneous on purpose and including urban, semi-urban, and suburban settings, public and private schools. Each of the members was chosen due to their habitual contact with visual learning materials, which made objections to the relevance of the proposed study to the question under consideration almost non-existent. The techniques of purposive sampling were employed to target those respondents who were able to provide rich and insightful descriptions of the role of visual communication in education (Palinkas et al., 2015). The inclusion criteria were based on exposures to long-term visual materials during studies, willingness to share personal experiences and interests with aspects of visual learning, as well as are diverse in terms of gender and academic backgrounds to make them representativeness.

Data Collection Methods

To examine the degree that visual communication and design psychology influence youth motivation and the process of learning in the Thai academic settings, the current study embraced a triangulated qualitative study. Three approaches together made up the data collection process: semi-structured interview, focus group discussion, and the diversity of visual elicitation methods. This selection of approaches was deemed appropriate due to their flexibility, the ability to produce subtle data, and appropriateness to the investigation (emotional, cognitive, and culturally particular responses to learning visuals).

The first data collection step consisted of semi-structured interviews. Twenty-five participants (10 teachers (including visual arts, general education and ICT) and 20 students (including various academic disciplines and grade levels) were invited to participate. The duration of interviews ranged between 30 and 60 minutes and were done in Thai language where I had the informed consent to respondents in order to foster genuineness and the comfortability of respondents. The questions also addressed experiences with educational visuals, the emotional qualities of different types of visual style, the preferred visual format (e.g. infographics, videos, illustrations), and assessments of the effects of visuals in helping support an understanding. The interview protocol also measured familiarity with visual design principles on the side of teachers, selection/construction of visual materials approaches, and access to institutional support or professional development in that regard. Each interview was recorded by audio-recording, which was afterward transcribed word-to word and later translated into the English language to be analyzed.

The second round of the data-gathering process was done by use of the focus group discussions. Students were grouped into two groups of five by visual learning and discussed freely about their learning experiences. Introduced to a wide range of learning images a textbook figure, classroom poster, PowerPoint presentation, and educational video clip, participants were urged towards explaining collective visions, conflicting ideas and learning dynamics. The group sessions were facilitated through open questions and were flexible such that there was a free flow of information between members of the group.

The visual elicitation methods played the role of the last data-collection tool. They were asked to choose some of the visuals offered in the portfolio, which represented a range of styles and forms, to state which one they found the most involving or effective. These included some of the items that were then coded and analyzed regarding their themes.

In general, the triangulated plan yielded a comprehensive set of data. Thematic coding method of analysis was used to draw out themes and patterns in the following forms: focus group recordings, interview transcripts and visual choices. The analysis of the data has shown that students and teachers both were interested in the visual learning content, but not all the styles had the positive response. Teachers explored the concepts of visual design in creating their own visuals but there was little institutional support of such undertakings. Visual richness and complexity turned out to be the key to pedagogical effectiveness, and infographics turned out to be an optimal format. Such results should serve as a reminder of the necessity of elaborating visual design professional development of Thai educators and further optimization of the taught visuals in a bid to make them more conducive to cognitive and emotional requirements of students.

The third methodological approach that was used in the current study is visual elicitation. Its main strength is the ability to produce emotional, intuitive responses of participants towards visual images. Subjects were asked to make evaluations on specially selected sets of images that varied on several design variables, those being complexity, colour scheme, cultural matter, and page format. The locally produced, as well as imported materials into the Thai schools contained various conditions of educational aids. They were supposed to describe how they feel about a particular visual, say that they found it interesting or confusing, and include statement on the effect it had on their inclination to stay attentive or to engage in the process. Through the process, the paper determined the implicit psychological effects of specific design elements: the tranquillity that is brought out by minimalist layouts, the excitement by use of bright colours and the cultural lack of responsiveness that is brought out by imagery that has no relevance to the local client. To add supplementary data to these data, the research team also proposed teachers to take part in visual elicitation sessions, thus, drawing their accounts of classroom images, how they expect students to react to them.

The use of several empirical strategies provided the chance to analyze the phenomenon under investigation thoroughly and in multilayers. The plan included not only the narratives of the participants but also the classroom discussion and the visual interaction in real-time, hence the originality of depth and scope of the perspective. The triangulation of these approaches strengthened the validity and depth of the results in an attempt to have a more comprehensive examination of the implication of visual communication, which was created by design psychology in influencing the engagement of students and their pedagogy in Thailand.

Data Analysis

A qualitative dataset emerged as a result of interviews, focus group sessions, and visual stimuli was analyzed through methodological approach called Thematic Analysis which lies between rigorous and flexible means of finding patterns (Braun & Clarke, 2006). A decision in favour of this technique was made due to the ability to incorporate the emotional, intellectual, and cultural aspect of the participants' interaction with education images and maintain the transparency and congruency of interpretations throughout the analytical stages. Along with the six-phase framework introduced by Braun and Clarke (2006) investigation was performed using the following steps: familiarization; coding; development of themes; reviewing themes; definition of themes and final report.

In the **familiarization phase**, all interview and focus group recordings were transcribed verbatim and, where necessary, translated from Thai to English. The researcher read the transcripts multiple times to become deeply immersed in the data, noting initial impressions and reflective observations. Simultaneously, photographs of visual elicitation responses were reviewed and documented, paying attention to participants' verbal and non-verbal cues (e.g., expressions of interest, confusion, or excitement) during the activities.

In the **coding phase**, key phrases and significant expressions were extracted from the data. Both semantic and latent codes were developed semantic codes captured explicit statements (e.g., "Too much text makes me tired"), while latent codes reflected underlying meanings (e.g., visual overload, emotional fatigue). Coding was initially conducted manually to preserve closeness to the data and later organized using **NVivo 12 software** to ensure systematic categorization and traceability. Codes were created separately for student and teacher groups, allowing for comparative analysis across roles and educational levels.

In the **theme development phase**, similar or related codes were grouped to form preliminary themes that reflected repeated patterns across the dataset. These initial themes were refined during the **theme review phase**, where the researcher examined whether the themes accurately represented the coded data and were sufficiently supported by multiple sources. Visual elicitation data were particularly useful in reinforcing themes with non-verbal indicators of emotional and cognitive engagement, such as tone of voice or expressions of enthusiasm when describing certain visuals.

In the **definition and naming phase**, four major themes were finalized: (1) Emotional Resonance and Visual Design, (2) Cultural Relevance and Identity Connection, (3) Clarity, Simplicity, and Cognitive Load, and (4) Teacher Awareness and Visual Integration Practices. Each theme included multiple subthemes (e.g., visual fatigue, cultural disconnection, infographics preference), which were defined with precision and linked back to theoretical frameworks such as Design Psychology, Self-Determination Theory, Cognitive Load Theory, and Culturally Responsive Pedagogy.

During the **reporting phase**, themes were contextualized within the Thai educational setting and interpreted in relation to the study's objectives and theoretical underpinnings. Direct quotations from students and teachers were included to illustrate

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findings and give voice to participants. Differences between student and teacher perspectives were noted, particularly regarding awareness of design principles, cultural considerations, and institutional constraints.
To increase the credibility and trust worthiness of the analytical process, triangulation was used by use of interview transcripts, group based discussion data and real time visual elicitation. Member checking was further conducted by showing the participants excerpts, in which the interpretations of these excerpts were given. This repetitive process reduced researcher bias and also was able to affirm that analytical interpretation was designed to reflect the intended meaning of the participants.

Limitations of the Study

- **Contextual Scope**: Findings may not generalize to all regions in Thailand, especially rural schools.
- **Subjectivity**: Responses may be influenced by personal preferences or educational background.
- **Language Nuance**: Although interviews were conducted in Thai (with researcher fluency), subtle meanings may have been lost in English translation of quotes.

IV. RESULTS AND FINDINGS

This section presents the core findings of the qualitative research, derived from in-depth interviews, focus groups, and visual elicitation activities conducted with Thai secondary and university students (n = 30) and teachers (n = 10). Thematic analysis revealed four overarching themes and associated subthemes that explain how educational visuals influence youth motivation, engagement, and cognitive-emotional responses in the Thai educational context.

Overview of Emerging Themes

The following four themes emerged from the analysis:

1. Emotional Resonance and Visual Design
2. Cultural Relevance and Identity Connection
3. Clarity, Simplicity, and Cognitive Load
4. Teacher Awareness and Visual Integration Practices

These themes, supported by direct quotes from participants, provide insight into how students interpret visual learning materials and how teachers perceive their use in the classroom.

Theme 1: Emotional Resonance and Visual Design: Most participants emphasized that visuals which were colourful, emotionally expressive, and aesthetically appealing generated stronger motivation and attention during learning. Students described feelings of interest, calm, or even excitement when visuals aligned with attractive design elements.
"If the slide has bright colours and images that relate to the topic, I feel more alert and want to follow." *(University student, Chiang Mai)*
Visuals with poor design such as excessive text, low contrast, or clutter elicited negative emotions such as boredom, confusion, or fatigue.
"When there are too many things on one slide, I feel like my brain shuts down." *(Secondary student, Bangkok)*
This theme confirms the psychological principle that well-designed visual environments stimulate positive affect, which in turn enhances learning readiness.
Subthemes:

- Visual calmness (light background, clean layout)
- Motivation through aesthetic appeal
- Negative reaction to overcrowded or out-dated visuals

Theme 2: Cultural Relevance and Identity Connection: Students responded more positively to visuals that reflected their cultural background, language, humour, or local context. When educational imagery featured Thai landscapes, local icons, or culturally familiar scenarios, students reported increased engagement and sense of belonging.
"I like it when the teacher shows pictures from Thai festivals or our foods it feels like I'm part of it." *(Secondary student, Nakhon Ratchasima)*
In contrast, visuals copied from foreign websites or textbooks without localization were seen as "cold" or "not for us."
"Some videos are in English with subtitles. I don't connect with them. They feel made for someone else." *(University student, Bangkok)*
This theme underscores the importance of visual cultural adaptation in educational materials, particularly in a collectivist society like Thailand, where identity and group connection are core to learning motivation.
Subthemes:

- Cultural imagery fosters connection
- Foreign visuals lead to disconnection
- Local humour and symbolism enhance receptivity

Theme 3: Clarity, Simplicity, and Cognitive Load: Students consistently expressed a preference for simple and focused visual materials. Diagrams, infographics, and illustrations that clearly conveyed one idea at a time helped them focus and understand better. Conversely, overloaded visuals caused confusion or required too much mental effort.

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"If the chart is clear with arrows and colors, I can remember it better." *(University student, Chiang Mai)*

"Sometimes the teacher puts five pictures, long text, and graphs on one screen it's too much!" *(Secondary student, Bangkok)*

Teachers acknowledged this issue, admitting that many slides are prepared in a hurry or copied from online sources without proper visual hierarchy or simplification. This theme connects directly to Cognitive Load Theory, suggesting that visuals should be designed to reduce extraneous load and support core processing.

Subthemes:

- Visual minimalism enhances learning
- Infographics over raw text
- Cognitive overload from multitier visuals

Theme 4: Teacher Awareness and Visual Integration Practices: Teacher interviews revealed a wide variation in visual design knowledge and integration practices. Some teachers actively used design principles color contrast, visual rhythm, iconography while others used default PowerPoint templates or textbook images with little critical thinking.

"I try to use icons, arrows, and transitions to make things smoother. It keeps students awake." *(ICT teacher, Bangkok)*

"Honestly, I just use what's already in the book. No time to design visuals myself." *(Science teacher, Nakhon Ratchasima)*

Most teachers expressed interest in learning more about design psychology, suggesting a lack of formal training. They also noted that curriculum materials provided by the Ministry of Education are visually out-dated and not adapted to current student expectations.

Subthemes:

- Visual knowledge disparity among teachers
- Time and training constraints
- Institutional neglect of visual design in curricula

Summary of Findings

Theme	Student Experience	Teacher Practice
Emotional Resonance	Motivated by color, mood, aesthetics	Some attention to design; mostly intuitive
Cultural Relevance	Stronger connection with localized visuals	Minimal adaptation of foreign materials
Clarity & Cognitive Load	Prefer clean, simplified visuals	Struggle with simplifying complex content
Visual Integration by Teachers	Disengaged by poor visuals	Need for formal training in visual literacy

Implications of the Findings

The findings suggest that:

- Thai students are emotionally responsive to visual design.
- Effective visuals are culturally resonant, minimal, and well-composed.
- Most teachers lack training in visual communication and design psychology.
- There is a gap between students' visual expectations and classroom materials.

These insights support the integration of design psychology in teacher training programs and curriculum development. Aesthetic engagement is not peripheral it is central to youth learning motivation in visually dominated environments.

V. DISCUSSION

The findings of this study highlight the crucial role of visual communication, guided by principles of design psychology, in shaping the motivational and cognitive experiences of students in Thai educational settings. As educational environments globally become more image-saturated and media-rich, the Thai context provides a revealing case of how visuals can both enhance and hinder learning depending on their design, cultural relevance, and implementation by educators.

One of the most prominent findings was the emotional impact of visuals on students' motivation and attention. Participants consistently emphasized that aesthetically appealing visuals those with balanced colour schemes, clear layouts, and emotionally resonant imagery made learning more enjoyable and memorable. This supports Norman's (2004) theory of emotional design, which asserts that visceral aesthetics can enhance user satisfaction and attention. In the context of Thai classrooms, where traditional lecture methods still dominate, the incorporation of visually engaging content offers a meaningful path toward modernizing pedagogy and meeting the needs of digital-native learners. Equally

important is the cultural dimension of educational visuals. Students reported higher motivation and deeper engagement when exposed to imagery that reflected their own cultural identity, such as local festivals, foods, symbols, and landscapes. This confirms the value of Culturally Responsive Pedagogy (Gay, 2010), which emphasizes the integration of students' cultural contexts into the curriculum to foster belonging and relevance. In Thailand's diverse sociocultural landscape, where students come from both urban and rural backgrounds, the localization of educational content is essential. However, the study revealed that many teaching materials remain Western-centric or generic, often copied from online sources without adaptation. This disconnects results in emotional detachment, cognitive confusion, or reduced enthusiasm for learning.

The third major theme clarity and cognitive load underscores the cognitive implications of visual design. Students expressed strong preferences for visuals that were clean, minimalistic, and focused on a single concept at a time. According to Cognitive Load Theory (Sweller, 1994), such visuals reduce extraneous load and support germane processing, thus enhancing comprehension. Overloaded or poorly organized slides, however, were associated with frustration and disengagement. Many students reported feeling overwhelmed by visuals that combined excessive text, irrelevant images, and inconsistent formatting. These findings highlight the need for design literacy among educators, especially in understanding how the brain processes visual stimuli during learning. Teacher interviews revealed significant variation in visual communication practices. While a few teachers demonstrated awareness of visual design principles and tried to incorporate icons, colours, and animations intentionally, most relied on default presentation templates or textbook visuals. The reasons included time constraints, lack of design training, and insufficient institutional support. This aligns with previous findings (Wattanatorn & Chansirisira, 2018), which indicate that despite growing digital infrastructure in Thai schools, the human and pedagogical side of digital transformation remains underdeveloped.

The study's findings suggest that effective visual communication is not merely a technical issue but a deeply pedagogical one. Visuals are not simply supplementary materials they are central to the construction of knowledge, emotional engagement, and identity formation in the classroom. When thoughtfully designed, they can foster the three key motivational needs described in Self-Determination Theory (Ryan & Deci, 2000): autonomy, competence, and relatedness. For instance, visuals that allow students to explore content independently support autonomy; those that simplify difficult concepts promote competence; and those that reflect students' cultural backgrounds nurture relatedness. In contrast, visuals that are foreign, cluttered, or overly abstract can undermine all three.

Furthermore, the study sheds light on the importance of teacher training and systemic support in advancing visual literacy. Most teachers expressed interest in learning more about how to design or evaluate visual materials effectively, indicating an unmet need within Thailand's teacher education programs. There is currently no standardized curriculum module in Thai teacher training institutes that specifically addresses design psychology or visual pedagogy. Integrating these topics could significantly enhance instructional quality, especially in schools where multimedia tools are already available but underutilized.

Another implication of the study concerns educational policy. While the Thai Ministry of Education has promoted digital learning initiatives, such as smart classrooms and digital content repositories, there has been little emphasis on the quality and cultural relevance of visual materials. Policymakers must recognize that visuals are not neutral they convey values, shape perceptions, and affect learning outcomes. Therefore, visual design guidelines and culturally adaptive content strategies should be part of any national education reform involving technology-enhanced learning.

Finally, this study demonstrates the importance of student voice in educational design. By foregrounding students' lived experiences and emotional responses, this research challenges top-down assumptions about what makes content effective or engaging. Students are not passive recipients of media they are active interpreters who bring cultural, emotional, and cognitive lenses to every visual they encounter. Listening to these voices is critical for creating more inclusive, equitable, and effective learning environments.

In sum, the intersection of design psychology, visual communication, and youth motivation offers a rich yet underexplored domain in educational research. In Thailand and other rapidly developing educational contexts, this intersection can inform more culturally grounded, emotionally intelligent, and pedagogically effective teaching practices. The findings call for a shift in how we view visual materials from decorative aids to fundamental building blocks of 21st-century learning.

VI. Conclusion

This qualitative study has explored how design psychology and visual communication influence youth motivation and learning engagement in Thailand's educational settings. The results demonstrate that visuals play a powerful role in shaping students' emotional responses, cognitive focus, and cultural connection within the classroom. Students are more motivated and engaged when visuals are aesthetically pleasing, culturally familiar, and cognitively clear. Conversely, visual materials that are cluttered, irrelevant, or disconnected from students' lived experiences tend to hinder learning and reduce interest. Teachers, though generally enthusiastic about using visual aids, face constraints due to lack of training, time, and institutional resources. Many remain unaware of key design principles and rely heavily on default or externally produced materials, which often do not resonate with Thai learners. These gaps suggest a critical need for integrating visual communication and design literacy into teacher education and curriculum development. Ultimately, the study affirms that visual learning is not a secondary or optional aspect of education it is central to how students construct meaning, form emotional bonds with content, and stay motivated in the classroom. As Thailand continues to invest in digital education, a parallel investment in culturally responsive, visually intelligent pedagogy is essential for meaningful and inclusive learning in the 21st century.

VII. Recommendations

Based on the findings of this study, several practical recommendations are proposed to enhance the effectiveness of visual communication in Thai educational settings.

First, teacher training programs should integrate modules on design psychology and visual pedagogy to equip educators with the skills to create engaging, culturally responsive, and cognitively effective visual materials. Workshops and professional development sessions on visual literacy, layout design, and cultural adaptation should be regularly offered at both pre-service and in-service levels.

Second, curriculum developers and textbook designers must prioritize the use of localized, contextually relevant imagery that reflects Thai students' lived experiences, cultural symbols, and regional diversity. This will enhance emotional resonance and foster a sense of inclusion.

Third, policy makers should develop national guidelines for visual design in education, ensuring that digital content initiatives are pedagogically sound, emotionally engaging, and culturally grounded. Collaboration between educators, designers, and psychologists is essential in this regard.

Finally, student feedback mechanisms should be incorporated into instructional design to allow learners to express their preferences and reactions to visual content, promoting a more learner-centered approach to material development.

VIII. Implications

The findings of this study carry important implications for education in Thailand and other similar contexts in the Global South. First, they underscore that visuals are not pedagogically neutral tools they actively shape student motivation, attention, and cultural connection. Therefore, investment in educational technology must be accompanied by an equal focus on the quality and design of visual materials.

Secondly, the study highlights the urgent need to embed visual communication competencies into teacher education and curriculum development. Teachers' lack of formal training in visual design contributes to a disconnect between student needs and instructional materials. Equipping educators with visual literacy skills can improve learning outcomes and classroom engagement.

At a broader level, the research illustrates that culturally responsive visuals promote inclusivity and support diverse learners. In multicultural societies like Thailand, tailoring educational imagery to local contexts is not just beneficial it is essential for equitable learning. Finally, the study reinforces that students are not passive consumers of visual content but active participants whose feedback must guide the design of effective educational environments.

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