



Liminal Space in Tactile Printmaking: A Phenomenological Study of Linocut Practice Among Visual Communication Design Students

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Abstract. In visual communication design education, students' creative processes generally focus on digital media-based outputs, while material-based creative experiences and tactile activities that enhance motor and sensory abilities are still relatively limited. Manual printmaking practices such as linocut present a different experience because they involve direct interactions between the body, tools, and materials that are full of uncertainty. This condition has the potential to create a liminal space, namely a transitional phase in the creative process characterized by exploration and deep involvement by the creator. This study aims to identify how liminal experiences emerge in the linocut process by design students. This study uses a combined phenomenological approach of Descriptive Statistics to show the patterns of students' experiences with interpretive phenomenology to interpret experiences in the students' creative process during linocut assignments. The research findings indicate that students' creative experiences in linocut practice are not only influenced by technical skills, but also by tactile involvement and material uncertainty that arise during the carving process. The results show that tactile experiences have the strongest influence on students' creative engagement. Interaction with lino materials encourages deep focus, creative reflection, and positive emotional transformation that has the potential to support coping mechanisms against academic pressure.

Keywords: Liminal Space, Tactile Printmaking, Linoart, Student, Phenomenological.

1 Introduction

The current phenomenon of design practice in the field of Visual Communication Design education tends to show the dominance of digital tools oriented towards speed, precision, and ease of revision. This convenience indirectly forms a design work pattern that emphasizes efficiency and performance oriented towards objective and idealistic results. However, the dominance of digital processes also raises concerns about the lack of experience and interaction of design students with basic materials, especially activities that require physical involvement, tactile sensations, and responses to material resistance, such as one of the Linocut student assignments in the Printing Techniques

course. The creativity developed by digital design practices differs from manual print-making practices such as linocut. In the linocut process, students not only make decisions both visual and conceptual, but also must interact directly with lino material, carving tools, and technical limitations of experience that cannot always be fully controlled. Every carving stroke is permanent and irreversible, unlike in the digital design process. This condition creates a creative experience full of uncertainty, the risk of error, and the need to adapt directly to changes that arise during the work process. This condition is where the liminal space occurs in tactile art work, especially in the academic environment of students.

The concept of liminal space was first introduced by [1] as part of a social transition process consisting of phases of separation, transition, and reintegration. This concept was later developed by [2], who explained that individuals in the liminal phase are in a state of "between and between," that is, being between two social positions characterized by uncertainty and identity transformation before reaching a new stable state. Although this concept was originally used to understand social rituals, recent research has shown that liminal experiences can also arise in the creative process, especially when individuals encounter situations that challenge their previous ways of thinking and working [3]. state that Liminality represents a transitional state in which learners experience uncertainty and transformation before achieving a new level of understanding. In the context of the creative process in an academic environment, this concept can be understood as a creative liminal space, a state in which students are between the initial idea stage and the realization of their work. This phase is often characterized by uncertainty, exploration, and experimentation, which allows for transformations in thinking. All aspects within this liminal space are empirical capital that can hone students' problem-solving skills. In tactile art practices such as linocut, this experience is reinforced through tactile experience or direct interaction with physical materials and the creative thinking processes that develop within them. The act of carving, feeling the resistance of the lino surface, and controlling hand pressure are not only technical but also trigger simultaneous creative reflection. Thus, the linocut process can be understood as a place where design decisions evolve simultaneously through cognitive reflection and sensory experience. By incorporating creative uncertainty, tactile art activities also have the potential to induce certain psychological phenomena related to the experience of time and emotions during the work process. Some students report that when engaged in repetitive carving processes that require intense concentration, they experience changes in their perception of time, such as losing awareness of how long they have been working or feeling that time passes more slowly. This state is often associated with a state of deep engagement in the creative activity, where the individual's attention is focused on the immediate interaction with the task at hand. However, at the same time, a work process that previously caused frustration due to errors or technical difficulties can transform into a more positive emotional experience when students successfully adjust their work strategies. This kind of emotional transformation suggests that uncertainty in the creative process is not always negative but can be part of a strategy for learning and creative adaptation. In such circumstances, tactile art activities such as linocut have the potential to function not only as technical exercises but also as reflective spaces that allow students to process their creative experiences in a more personal way.

This study aims to understand how tactile art activities in the form of linocut tasks can create liminal space experiences for visual communication design students. Specifically, this study focuses on how the element of uncertainty in the carving process, changes in the perception of time during the work, and the emotional transformations experienced by students contribute to a more reflective and personal creative experience. By understanding the dynamics of this experience, this study is expected to contribute to the discourse on the role of manual art practices in design education, particularly in understanding how the interaction between the body, materials, and uncertainty can shape students' creative experiences in greater depth.

In the context of global higher education, discussions about learning experiences that support students' cognitive, emotional, and well-being development are increasingly linked to the sustainable development agenda formulated by the United Nations through the framework of the Sustainable Development Goals (SDGs). Specifically, learning practices that encourage reflective experiences, physical engagement, and the development of students' personal capacities are linked to SDG 4: Quality Education, which emphasizes the importance of inclusive and meaningful learning that fosters the development of critical thinking skills and creativity.

2 Literature Review

The study of liminal spaces is closely related to how individuals think in response to each challenge and the state they find themselves in. Even with limited knowledge and experience, the resources they possess are the consistency to complete the tasks they begin and the ability to embrace uncertainty. The uncertainty aspect in this context has been discussed in several previous studies; the differences can be systematically seen in the following explanation.

- (i). Problem-solving abilities as adaptive abilities and students' creative processes can grow through uncertainty as part of learning [4].
- (ii). Resilience, curiosity and creative exploration in facing every possible risk are forms of productive uncertainty [5].
- (iii). The typical characteristics of liminal spaces include action or movement, flexibility or the learner's adaptive ability in facing obstacles and risks, and uncertainty factors [5].
- (iv). Generally, significant transformative learning results from the creative process as liminal learning [6].

These four studies revealed similar patterns related to liminal space in tactile art activities as a developing ability, including:

- (i). Liminal space is an arena of creative transition characterized by instability, uncertainty, and reflective experimentation.
- (ii). Uncertainty is not seen as a barrier to learning but rather as a productive condition; that is, uncertainty triggers problem-solving, exploration, and creativity.
- (iii). Emotional transformation occurs because creative practices have the potential to generate satisfaction, calm, and self-confidence.
- (iv). Creativity develops through interaction with materials (sensory), mistakes, and emotional reflection.

From these patterns, it can be concluded that the concept of liminal space is often understood as a transitional space where individuals are between conceptual ideas and material realization. Several studies in design studies have shown that creative practices can create liminal spaces that allow participants to experiment with new ideas, express themselves more freely, and experience changes in the way they think and interact with their social environment. Studies on creative design methods have shown that creative activities can form liminal spaces that facilitate the transformation of knowledge, emotions, and social relationships among participants involved in the process [7].

My research focuses on how linoart printmaking practices, as tactile art activities, impact students' creativity and emotional experiences. How the uncertainty and emotional experiences that emerge as a process of honing creativity. In printmaking practices like linoart, students must deal with material limitations, technical errors, and unpredictable design decisions. In this process, hand movements, tool pressure, and material resistance become part of the creative thinking process that cannot be fully represented in a digital environment. In art and design education, making practices are often understood as a form of material-based experiential learning. This process involves direct interaction with tools and materials, allowing students to develop understanding through experimentation and reflection during the work process. This approach is in line with the view that, the uncertainty that arises in practice is often considered an important part of the creative process. In arts-based education, activities that contain elements of uncertainty can help students develop adaptability and increase reflective awareness of their own thought processes. Studies on arts-based learning show that this approach can also increase students' attention, awareness of the process, and emotional engagement in learning activities [8].

Regarding the Research Gap, the four studies largely discussed liminal space as an educational theory and concept, yet have not been empirically measured. Previous studies generally focused on general educational practices and digital learning, while our study specifically focused on tactile or manual art practices. Regarding research instruments, most used interviews, reflections, and narratives, while our study involved questionnaires and statistical analysis. The most prominent differentiation is that this study's object is specific to linoart or linocut practices, which will also specifically measure tactile experiences (a manual art practice involving sensory and motor skills), changes in the creator's emotions, acceptance of uncertainty, and creative exploration.

3 Methodology

This study aims to identify how elements of material uncertainty, physical involvement in the carving process, and emotional changes during the creative process contribute to students' creative experiences in the context of design learning. This study uses a qualitative phenomenological approach supported by quantitative descriptive analysis to explore the experience of liminal space in the creative process of linocut among visual communication design students.

The phenomenological approach was chosen because this study focuses on the subjective experiences of students during the process of creating works, particularly in

dealing with material uncertainty, tactile experiences, and emotional transformations that arise during manual graphic art practice.

Quantitative analysis was used to identify patterns of experience through questionnaire data, while phenomenological interpretation was used to understand the meaning of these experiences in the context of the creative process. This is in line with Lorenzi & White who stated that the phenomenological approach is used to reveal how individuals experience the transition process and interpret the meaning of these experiences in an educational context [9].

The research participants were third-semester Visual Communication Design students who were taking a studio practice course. Participant characteristics includes:

- (i). No previous experience in manual graphic arts.
- (ii). Participated in a narrative-based linocut project.
- (iii). Involved in the entire production process.

The requirements for this assignment include:

- (i). Selecting a traditional fairy tale, either from Indonesia or internationally.
- (ii). Identifying the most dramatic scene according to personal interpretation.
- (iii). Developing the scene in the form of a visual sketch.
- (iv). Transfer the sketch to lino media and complete the linocut process manually.
- (v). Instructor assistance is only provided on technical aspects related to understanding positive and negative areas in relief printing techniques, without interfering with students' aesthetic decisions.
- (vi). The total duration of work is approximately 36 hours of clean work time.

3.1 Research Instruments

The main research instrument was a questionnaire on the creative process experience consisting of 22 items on a 1–5 Likert scale. The questionnaire was designed to measure five dimensions of liminal experience:

- (i). Uncertainty and loss of control
- (ii). Body awareness and tactile experience
- (iii). Time distortion during the creative process
- (iv). Emotional transformation
- (v). Reflection and self-meaning
- (vi). In addition, two open-ended questions were used to capture students' experiences in greater depth.

3.2 Data Analysis Techniques

Data analysis was conducted in several stages:

- (i). Descriptive statistics to observe trends in student responses.
- (ii). Reliability testing using Cronbach's Alpha to test the internal consistency of the instrument.
- (iii). Exploratory Factor Analysis (EFA) to identify the dimensional structure of liminal experiences.

- (iv). Thematic analysis of open-ended responses to enrich phenomenological interpretation.

From the 70 students who participated in the assignment, 54 (77%) participated as research respondents. An Exploratory Factor Analysis (EFA) model was conducted to identify latent constructs underlying students' experiences during the linocut process. Thematic descriptive questions (open-ended) were used to explain the factors and reflective patterns of respondents. Exploratory Factor Analysis (EFA) was conducted to examine the underlying structure of students' responses to the 22-item questionnaire. The data's suitability for factor analysis was confirmed using the Kaiser–Meyer–Olkin test and Bartlett's sphericity test. Factors were extracted using principal component analysis and rotated using the Varimax method to achieve a clearer factor structure. The following table shows the stages of the KMO and Bartlett tests carried out before EFA. From the table shows, The Kaiser–Meyer–Olkin (KMO) measure was 0.72, indicating adequate sampling adequacy, while Bartlett's test of sphericity was significant ($p < 0.001$), confirming that the data were suitable for Exploratory Factor Analysis (EFA).

Table 1. KMO and Bartlett test results

Test	value
Kaiser-Meyer-Olkin	0,72
Bartlett's Test Chi-square	654,23
df	231
Sig	<0.001

To determine the number of factors influencing student experience patterns, a factor simulation was conducted using the Principal Component Analysis and Varimax rotation methods. Four main factors were then formed, explaining 69% of the data variance.

Table 2. Total Variance Explained

Factor	Eigenvalue	Variance Explained
Factor 1	6,48	29,40%
Factor 2	4,12	18,70%
Factor 3	2,86	13,00%
Factor 4	1,74	7,90%
Total		69,00%

From the simulation based on the content of the questions, the factors are interpreted as follows. Exploratory factor analysis identified four underlying factors explaining 69% of the total variance. The first factor, labeled tactile embodied engagement, reflects students' direct physical interaction with lino material and carving tools. The second factor represents liminal creative immersion, describing students' deep engagement and altered perception of time during the creative process. The third factor relates to

emotional transformation and coping, indicating positive emotional responses and reflective learning. The final factor represents material uncertainty, referring to students' initial hesitation and unpredictability encountered in manual printmaking.

Table 3. Information table of factors based on categories in the question.

Factor	Meaning	Item
Factor 1	Tactile Embodied Engagement	Q5-Q10
Factor 2	Liminal Creative Immersion	Q11-Q16
Factor 3	Emotional Transformation & Coping	Q17-Q22
Factor 4	Material Uncertainty	Q1-Q4

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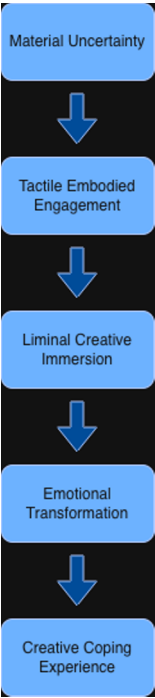


Fig. 1. The conceptual model as a result from the EFA model analysis.

This research model explains that the experience of liminal space in students' creative processes is formed through the interaction between tactile art practices and the uncertainties inherent in the creative process. As a form of practice-led learning, linocut encourages students to engage directly with materials through tactile and motoric experiences. This interaction results in an experience of embodied creativity, where creative thinking develops through the coordination of body, tools, and materials. During this process, students encounter various forms of technical uncertainty that trigger creative exploration and adaptation to unpredictable situations. This condition then creates a creative liminal space, a transitional phase characterized by intense cognitive and emotional engagement. During this phase, students often experience a shift in their perception of time, increased focus, and spontaneous exploration of ideas. This liminal experience has the potential to produce personal transformation in students, such as increased creative reflection, confidence in their creative abilities, and emotional satisfaction upon completion. In the context of design education, this process also has implications for students' academic experiences, particularly in the form of increased creative productivity and the potential function of artistic activities as a coping mechanism for academic stress.

4 Discussion

4.1 Data Analysis

Exploratory factor analysis identified four factors with eigenvalues greater than 1, which explained most of the variance in student responses. These factors represent four dimensions of creative experience during the linoleum printing process: tactile engagement, creative immersion, emotional transformation, and material uncertainty.

Uncertainty in the Creative Process. Questions Q1–Q4 showed relatively low to moderate levels of agreement (mean 2.67–3.04). This indicates that some students did experience uncertainty in the linocut process, but this experience was not predominantly perceived as a negative one. These findings suggest that uncertainty in manual printmaking practice is a natural part of students' creative exploration. In the context of design learning, this state can be understood as a transitional phase that allows students to explore various visual possibilities before arriving at the final form of the work. This aligns with Cimier et al.'s statement, which argues that the creative process often involves uncertainty and the exploration of ideas, even experimental activities. This state is a crucial condition that allows individuals to explore various possibilities before arriving at a final solution [10]. Likewise, Anderson & Milbrandt stated that in the learning process, creators can develop resilience and creative maturity because they are driven by risk and uncertainty factors in artistic practice [11].

Table 4. Data depicting the measurement of aspects of ambiguity and uncertainty (Initial liminal phase).

Statements	Mean	Interpretation
Doubt about the outcome	2,72	Tends to be low-moderate
Not being able to fully control the outcome	3,04	Moderate
Unpredictability is uncomfortable	2,67	Relatively low
Having to adjust the original plan	2,85	Moderate-low

Tactile Experience in the Creative Process. The variables related to tactile experience (Q5–Q10) showed very high scores, with mean values ranging from 4.06 to 4.61. The highest score was found in Q7 (4.61), indicating that most students strongly felt the physical involvement of their hands and tools during the lino carving process. This finding suggests that the direct interaction between the students' bodies, carving tools, and lino material plays a crucial role in the visual decision-making process. The sensation of tool pressure, the texture of the lino surface, and the coordination of hand movements are integral to the students' creative thinking process. As Lehrman argues regarding tactile art activities, it states that Body-based learning emphasizes that knowledge and creativity emerge through the body's interaction with materials and the environment, not just through cognitive processes alone [12]. Thus, creativity in linocut practice develops not only through cognitive processes but also through the bodily experience of directly manipulating the material.

Table 5. Measurement data on the aspects of body awareness and materiality (Embodied liminality).

Statements	Mean	Interpretation
Learning to accept mistakes	4,46	Very High
Becoming more aware of hand movements	4,46	Very High
Tool pressure influences visual decisions	4,61	Very High
Focusing on physical experiences	4,06	High
Material interactions influence ideas	4,11	High
Physical processes foster divergent thinking	4,28	Very High

Liminal Experiences in the Creative Process. Indicators of liminal space in this study can be seen in the variables related to deep involvement in the creative process (Q11–Q16). The mean scores for this group ranged from moderate to high (3.35–3.74).

This indicates that some students experienced a state of intense involvement during the linocut process. In several cases, students reported changes in their perception of the creative process, including increased awareness of the visual exploration process and reflection on errors made during the carving process. These findings suggest that linocut practice can create a transitional state in students' creative experiences, moving them between the stages of idea exploration and the realization of visual form.

Table 6. Measurement image data on the time distortion and immersion aspects.

Statements	Mean	Interpretation
Loss of sense of time	3,5	Moderate
Processes feel slower	4,07	High
Immersed in the process	3,74	High
Rarely thinks about evaluation	3,46	Moderate

Emotional Transformation in the Creative Process. Variables Q17–Q22 showed relatively high to very high mean scores (3.70–4.37). High scores for Q17 (4.37) and Q22 (4.33) indicate that most students experienced positive emotional changes after completing the linocut process. Students reported that the process of carving and completing the work provided a calming and emotionally satisfying experience. A space for emotional transformation can be created through participation in artistic activities, as serenity, satisfaction and increased acceptance of personal challenges are experiences that open up this space [8]. Furthermore, several respondents stated that they learned to accept mistakes as part of the creative process.

Table 7. Measurement data depiction on the emotional dynamics aspect.

Statements	Mean	Interpretation
Initial frustration	3,07	Moderate
Emotion change throughout the process	3,35	Moderate
Calmer after completion	4,37	Very High
Release tension	3,78	High

These findings suggest that tactile art practices not only produce visual products but also facilitate positive emotional transformation in students.

Overall, the research results indicate that the experience of liminal space in linocut practice is formed through three main mechanisms:

- (i). Material uncertainty in the carving process
- (ii). Bodily involvement in the tactile experience
- (iii). Emotional transformation during the creative process

These three aspects create a creative environment that allows students to experience deep involvement in the creative process and develop reflections on their creative experiences. This interpretation is also in line with the statement of who stated that when individual creators reformulate problems and develop new ways of thinking, this is a transformation process that exists in creative practice [13].

The Experience of Uncertainty as a Trigger for Creative Liminal Space. These findings indicate that although students experience technical uncertainty during the carving process, this is not always interpreted as a negative experience. Rather, uncertainty in the creative process is part of the dynamic of the students' visual exploration. This condition aligns with the concept of liminality introduced by Arnold van Gennep and developed by Victor Turner, which explains that transitional phases are often marked by ambiguity and uncertainty that open up the possibility of experiential transformation.

In the context of linocut practice, uncertainty arises because students lack complete control over the outcome of their lino carving. This situation forces students to make adjustments to their previously created visual plans. This adaptation process demonstrates that students are entering a transitional creative state, one that exists between their initial visual idea and the material outcome formed during the carving process. Thus, uncertainty in printmaking practice serves not only as a technical obstacle but also as a mechanism that opens up space for creative exploration for students.

Tactile Experience and Embodied Creativity in the Linocut Process. The most robust finding in this study relates to students' tactile experiences during the linocutting process. The data shows that the statement "the pressure and touch of the carving tool influence how I make visual decisions" had the highest mean score among all variables measured in the questionnaire. Furthermore, respondents also indicated a high level of agreement with the statement regarding awareness of hand movements during carving.

These results indicate that students' creative processes in linocutting practice occur not only at a conceptual level but also through bodily experiences directly involved in interacting with the material. The sensation of tool pressure, the texture of the lino surface, and the coordination between hand movements and visual decisions are integral to students' creative thinking processes. This finding is in line with, who stated that hands-on engagement with materials stimulates divergent thinking and enhances creative problem-solving abilities [14].

These findings support the embodied cognition perspective, which states that human thought processes are not separate from the body's sensorimotor experiences. In the context of art practice, physical activities such as carving or manipulating materials can trigger different creative reflection processes compared to the more visually-based digital design process.

Furthermore, most students stated that direct interaction with lino materials made them feel more connected to the work they were creating. This suggests that tactile art practices can foster a more intimate relationship between the creator and the object, allowing the creative process to be understood not only as a visual production activity but also as a reflective material experience.

Loss of Time as an Indicator of Liminal Space. One important indicator of the liminal experience in this study is the altered perception of time during the creative process. Most respondents stated that they often lost their sense of time while working with linocuts and felt immersed in the carving process. This phenomenon suggests that linocut can trigger a high level of concentration in students. When students are deeply engaged in the carving process, their attention is no longer focused on the final product

or academic assessment, but rather on the experience occurring during the creative process.

This finding strengthens the argument that tactile art practices can create a state of deep engagement similar to the experience of flow. In this state, individuals experience a simultaneous integration of physical action, cognitive attention, and emotional response. This state can also be understood as a form of creative liminal space, where students are in a transitional phase between the exploration of ideas and the visual realization of the work. This finding is in line with the argument of which states that liminal experiences process individuals experiencing psychological transformation during the creative process [15].

Emotional Transformation in the Creative Process. In addition to cognitive and sensorimotor aspects, this study also demonstrated emotional changes experienced by students during the linocut process. In the early stages of the process, some students reported feelings of frustration when encountering technical difficulties or errors in the carving process. However, over time, many respondents stated that they learned to accept mistakes as part of the creative process.

The statement "I learned to accept mistakes as part of the creative process of linocutting" received a very high level of agreement among respondents. Furthermore, most students also stated that they felt calmer after completing the linocut process. These findings suggest that tactile art practices not only produce visual works but also facilitate emotional transformation in students. The process of accepting mistakes, adjusting visual plans, and gradually completing the work can help students develop a reflective attitude towards their own creative process.

Linocut as a Coping Mechanism in an Academic Context. Another interesting finding in this study was the students' perception that the linocut process helped them release emotional tension. Several respondents stated that the carving activity provided a calming experience and helped them distract themselves from other academic pressures.

In the context of design education, which often demands intensive visual idea production, this experience suggests that tactile art activities can serve as a coping mechanism for academic stress. The slow, repetitive work process of linocut allows students to focus on a meditative physical activity, providing a reflective space amidst the academic pressures they experience.

Furthermore, most students also stated that they began to view the creative process as more important than the final product. This shift in perspective suggests that manual art practices can help students understand creativity as a gradually evolving, exploratory process.

5 Conclusion and Recommendation

This research demonstrates that linocut practice, as a tactile art activity, can create a liminal space experience in the creative process of design students. This experience emerges through the interaction between material uncertainty, bodily involvement in

the manipulation of tools and materials, and the emotional transformations students experience during the creative process. The analysis reveals that tactile experiences have the strongest influence in shaping students' creative engagement. The direct interaction between the hand, carving tool, and linocut material not only influences the technical aspects of work production but also plays a role in students' visual decision-making and creative reflection. Furthermore, this study found that linocut practice can trigger positive emotional changes in students, including increased calm, satisfaction after completing a work, and the ability to accept mistakes as part of the creative process. These findings suggest that tactile art activities have the potential to serve as a coping mechanism for academic pressure in the context of design education. Thus, the integration of manual printmaking practices into the visual communication design curriculum not only contributes to the development of students' technical skills but also supports reflective and meaningful creative experiences within the learning process.

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