

Table S1

Codebook for Qualitative Content Analysis: Definitions and Coding Criteria in (a) Japanese and (b) English Translation

a: Japanese (Original)

コード名	定義	採用基準	除外基準
バランス・対比	全体の均衡、左右の釣り合い、または要素間の対比。	「バランス」「均衡」「アンバランス」「対比」など。	単なる「配置」は含めない。「調和（統一感）」とは区別する（釣り合いか、まとまりか）。
色・色彩	花材や花器の色、配色、鮮やかさ。	「色」「色彩」「カラー」「鮮やか」「派手」「地味」など。	
形	全体のシルエット、輪郭、または花材そのものの形状。	「形」「ライン」「見た目」「高さ」「線」など。	空間的な配置の工夫は「配置・構造」へ。
配置・構造	空間的な位置取り、立体的な構成、レイアウト。	「配置」「構成」「奥行き」「立体感」「組み合わせ方」「活け方」など。	
非対称	左右非対称であること。シンメトリーの回避。	「非対称」「不均等」「崩し」など。	単に「バランスが悪い」という否定的な意味の場合は除く。
簡素・シンプル	要素が少ないこと。装飾過多でないこと。	「シンプル」「簡素」「スッキリしている」「ごちゃごちゃしていない」など。	
余白・空白	作品の内部にある空間性。意図的な「間（ま）」。	「余白」「空白」「空間（を生かす）」「間」「隙間」「抜け感」など。	飾る部屋や環境の話は「背景・周囲」へ。
背景・周囲	作品の外部環境との関係性。TPO。	「背景」「床の間」「部屋」「飾る場所」「ロケーション」「雰囲気合う」など。	作品自体の隙間は「余白・空白」へ。
自然さ・生命力	人工的でないこと。植物の生命力やありのままの姿。	「自然な」「躍動感」「生き生きとした」「野にあるように」など。	特定の「花の種類」への言及は「花（素材）」へ。
花（素材）	花材そのものの美しさや選択、素材の個性を尊重すること。	「花そのもの」「素材」「花材」「個性を活かす」「植物の命」など。	
季節感	時間や季節の移ろい、旬を感じさせること。	「季節感」「四季」「春/夏/秋/冬」「旬」など。	
花器・花瓶	器の選び方、器と花の取り合わせ。	「花器」「花瓶」「器（うつわ）」など。	

調和	複数の要素が喧嘩せず、まとまっていること。	「調和」「統一感」「まとまり」「マッチしている」「馴染む」など。	力学的な「バランス（釣り合い）」とは区別する。
静けさ・謙虚さ	落ち着き、静寂、主張しすぎない美しさ。	「静かさ」「落ち着く」「派手すぎない」「謙虚」「わびさび」など。	
テーマ・主題	作品に込められた物語、コンセプト、題名。	「テーマ」「ストーリー」「世界観」「意味」など。	
自己表現・感性	作り手の個性、感性、心を込めること。	「自己表現」「作り手の心」「感性」「独創性」「オリジナリティ」など。	
姿勢・心構え	生ける時の精神状態やプロセス、マナー。	「楽しむ」「心を込めて」「無心で」「丁寧な所作」など。	
感情・感動	見る人の心を動かすこと（鑑賞者視点）。	「感動」「驚き」「はっとする」「癒される」「心が洗われる」など。	単に「きれい」という評価のみの場合は除く。

b: English translation

Code	Definition	Inclusion Criteria	Exclusion Criteria
Balance/Contrast	Overall equilibrium, left-right balance, or contrast between elements.	"Balance," "Equilibrium," "Imbalance," "Contrast," etc.	Do not include mere "Arrangement." Distinguish from "Harmony (Sense of unity)" (Is it a balance or a cohesiveness?).
Color	Color of the flowers/vases, color scheme, vividness.	"Color," "Hue," "Vivid," "Flashy," "Subdued," etc.	
Form/Shape	Overall silhouette, contour, or the shape of the floral material itself.	"Form," "Line," "Appearance," "Height," "Stroke," etc.	Ingenuity in spatial arrangement goes to "Arrangement / Structure."
Arrangement/Structure	Spatial positioning, three-dimensional composition, layout.	"Arrangement," "Composition," "Depth," "Three-dimensionality," "How to combine," "How to arrange," etc.	
Asymmetry	Being left-right asymmetric. Avoidance of symmetry.	"Asymmetry," "Unevenness," "Breaking," etc.	Exclude when it simply means "poor balance" in a negative sense.
Simplicity	Having few elements. Not being overly decorated.	"Simple," "Minimalist," "Clean," "Not cluttered," etc.	

Space/Ma	Spatiality within the work. Intentional "Ma" (interval/pause).	"Blank space," "Negative space," "Space (to utilize)," "Interval," "Gap," "Sense of openness," etc.	Important: Talk about the room or environment for display goes to "Background / Surroundings."
Background/Environment	Relationship with the external environment of the work. TPO.	"Background," "Tokonoma (alcove)," "Room," "Place to display," "Location," "Fits the atmosphere," etc.	Important: Gaps within the work itself go to "Blank Space / Negative Space."
Naturalness/Vitality	Not artificial. The vitality of the plant and its natural state.	"Natural," "Sense of dynamism," "Lively," "As if it were in the field," etc.	Reference to a specific "type of flower" goes to "Flower (Material)."
Flowers (Material)	Beauty or selection of the floral material itself, respecting the individuality of the material.	"Flower itself," "Material," "Floral material," "Utilizing individuality," "Life of the plant," etc.	
Seasonality	Feeling the passage of time and seasons, and the peak of the season.	"Seasonality," "Four seasons," "Spring/Summer/Autumn/Winter," "Peak season," etc.	
Vase/Container	Choice of container, the combination of container and flowers.	"Vase," "Container," "Vessel," etc.	
Harmony	Multiple elements not clashing and forming a cohesive whole.	"Harmony," "Sense of unity," "Cohesiveness," "Matching," "Blending in," etc.	Distinguish from mechanical "Balance" (equilibrium).
Quietness/Humility	Calmness, silence, beauty that does not assert itself too much.	"Quietness," "Calmness," "Not too flashy," "Humility," "Wabi-sabi," etc.	
Theme/Concept	Story, concept, title contained within the work.	"Theme," "Story," "Worldview," "Meaning," etc.	
Self-expression/Sensitivity	Individuality, sensitivity of the creator, pouring one's heart into it.	"Self-expression," "Creator's heart," "Sensitivity," "Originality," "Uniqueness," etc.	
Attitude/Mindset	Mental state, process, and manners during arrangement.	"Enjoying," "Putting one's heart into it," "Being in a state of no-mind," "Careful gestures," etc.	
Emotion/Impression	Moving the viewer's heart (viewer's perspective).	"Impression," "Surprise," "Gasping," "Healing," "Cleansing the soul," etc.	Exclude when it is merely an evaluation of "beautiful" (because it is not specific).

Table S2

Degree Centrality for the Top 20 Nodes in Each Group for (a) Novices and (b) Experts

a) Novices			b) Experts		
Rank	Word	Degree centrality	Rank	Word	Degree centrality
1	flower (花)	.97	1	beautiful (美しい)	.59
2	balance (バランス)	.91	2	ikebana (生け花)	.50
3	beautiful (美しい)	.53	3	flower (花)	.50
4	color (色)	.44	4	space (空間)	.41
5	arrangement (配置)	.44	5	nature (自然)	.36
6	overall (全体)	.41	6	person (人)	.32
7	impression (感)	.41	7	none (無い)	.23
8	good (良い)	.38	8	representation (表現)	.23
9	shape (形)	.29	9	artwork (作品)	.14
10	harmony (調和)	.26	10	plant (植物)	.14
11	season (季節)	.26	11	beauty (美)	.14
12	space (空間)	.26	12	mind (心)	.14
13	color scheme (色合い)	.24	13	flower material (花材)	.09
14	none (無い)	.24	14	part (一部)	.09
15	representation (表現)	.21	15	impression (感)	.09
16	color (色彩)	.21	16	color (色)	.09
17	object (物)	.12	17	line (線)	.09
18	combination (組み合わせ)	.12	18	object (物)	.09
19	plant (植物)	.12	19	branch (枝)	.09
20	vase (器)	.12	20	balance (バランス)	.09

Note. Degree centrality represents the proportion of other nodes to which a given node is directly connected. Networks were constructed from word co-occurrences within the same response, retaining edges with co-occurrence counts ≥ 3 and the top 35 nodes by weighted degree.

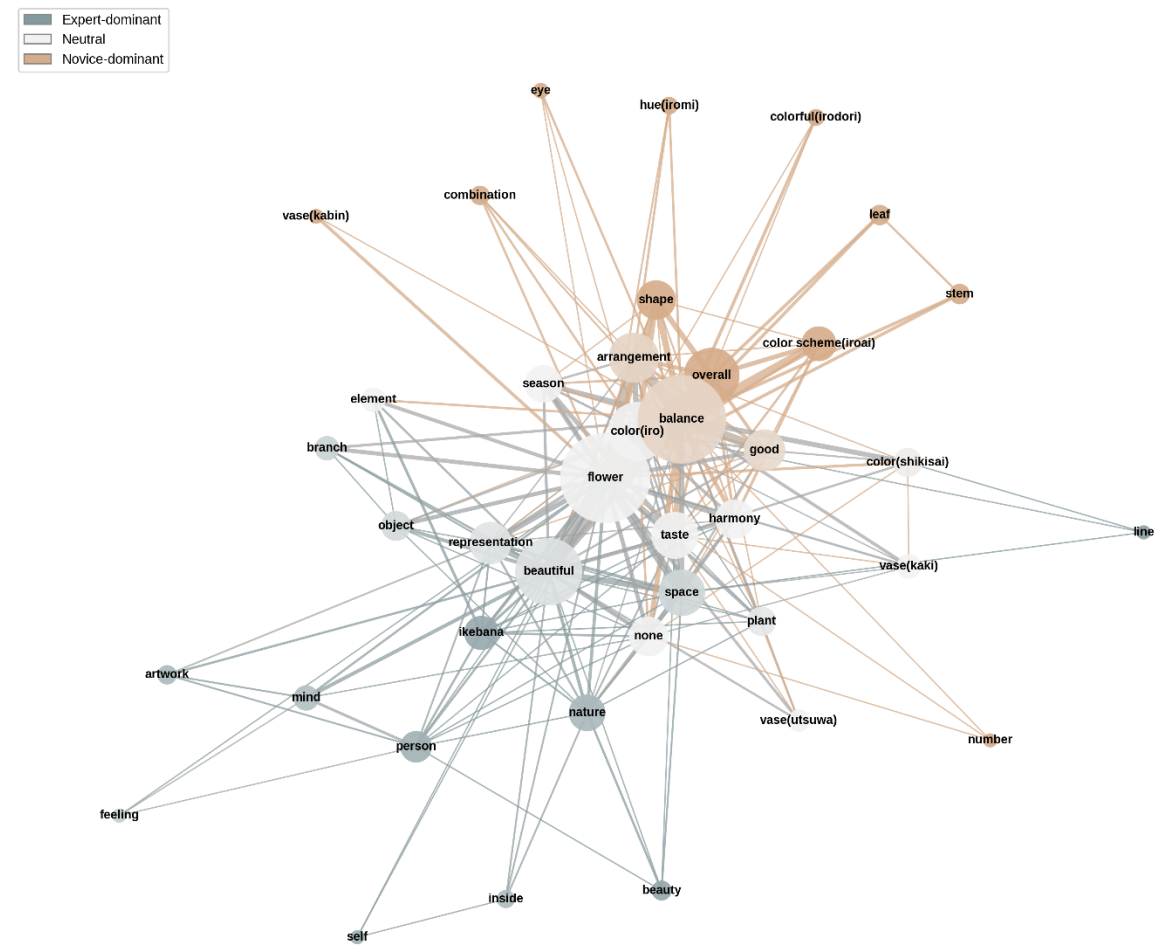
Table S3*Topic Prevalence by Group and Top Terms from BERTopic*

Topic	Top terms	Novice (%)	Expert (%)	Diff	Top words (JP)	Top words (EN)
4	Overall balance of color	13.5	2.2	+11.3	バランス, 色合い, 色彩, 形, 調和	balance, color scheme, color, shape, harmony
3	Balance of color and form	14.3	4.3	+9.9	色, バランス, 色彩, 形, 美しい	color, balance, color, shape, beautiful
1	Compositional balance of plant parts	14.3	4.3	+8.7	花, 配置, バランス, 季節, 色彩	flower, arrangement, balance, season, color
8	Evoked emotion	7.8	4.3	+3.4	作品, 心, 印象, 要素, 対称	artwork, mind, impression, element, symmetry
5	Vividness and balance	7.8	6.5	+1.2	色合い, バランス, 色, 形, 空間	color scheme, balance, color, shape, space
9	Aesthetic evaluation	4.1	4.3	-0.3	心, 調和, 印象, 色味, バランス	mind, harmony, impression, hue, balance
2	Beauty of flowers and harmony	9.8	13.0	-3.2	花, 美しい, 表現, バランス, 形	flower, beautiful, representation, balance, shape
0	Color and balance	18.4	21.7	-3.4	花, バランス, 美しい, 季節, 形	flower, balance, beautiful, season, shape
6	Natural vividness	9.4	13.0	-3.7	自然, 植物, 形, 美しい, 空間	nature, plant, shape, beautiful, space
7	Artistry and philosophy	2.0	26.1	-24.0	自然, 要素, 美しい, 作品, 調和	nature, element, beautiful, artwork, harmony

Note. Topic labels were assigned by the authors based on each topic's representative documents; top terms are the highest-ranked words by c-TF-IDF. Novice % and Expert % indicate the proportion of each group's responses assigned to the topic (novice n = 245, expert n = 46). Diff = Novice % - Expert %. Positive values indicate higher prevalence among novices.

Figure S1

Combined Co-occurrence Network of Aesthetic Concepts for Novices and Experts



Note. A single co-occurrence network combining both groups. Because the groups differed in size (novices $n = 245$, experts $n = 46$), raw co-occurrence counts were normalized by each group's number of responses before comparison. Node and edge color indicate group association (novice-dominant, neutral, or expert-dominant), and color saturation reflects the strength of that association. Node size reflects weighted degree and edge width reflects co-occurrence frequency. Separate within-group networks are shown in Figure 3.

Figure S2

Two-Dimensional Document Map of BERTopic Topics by Expertise Level

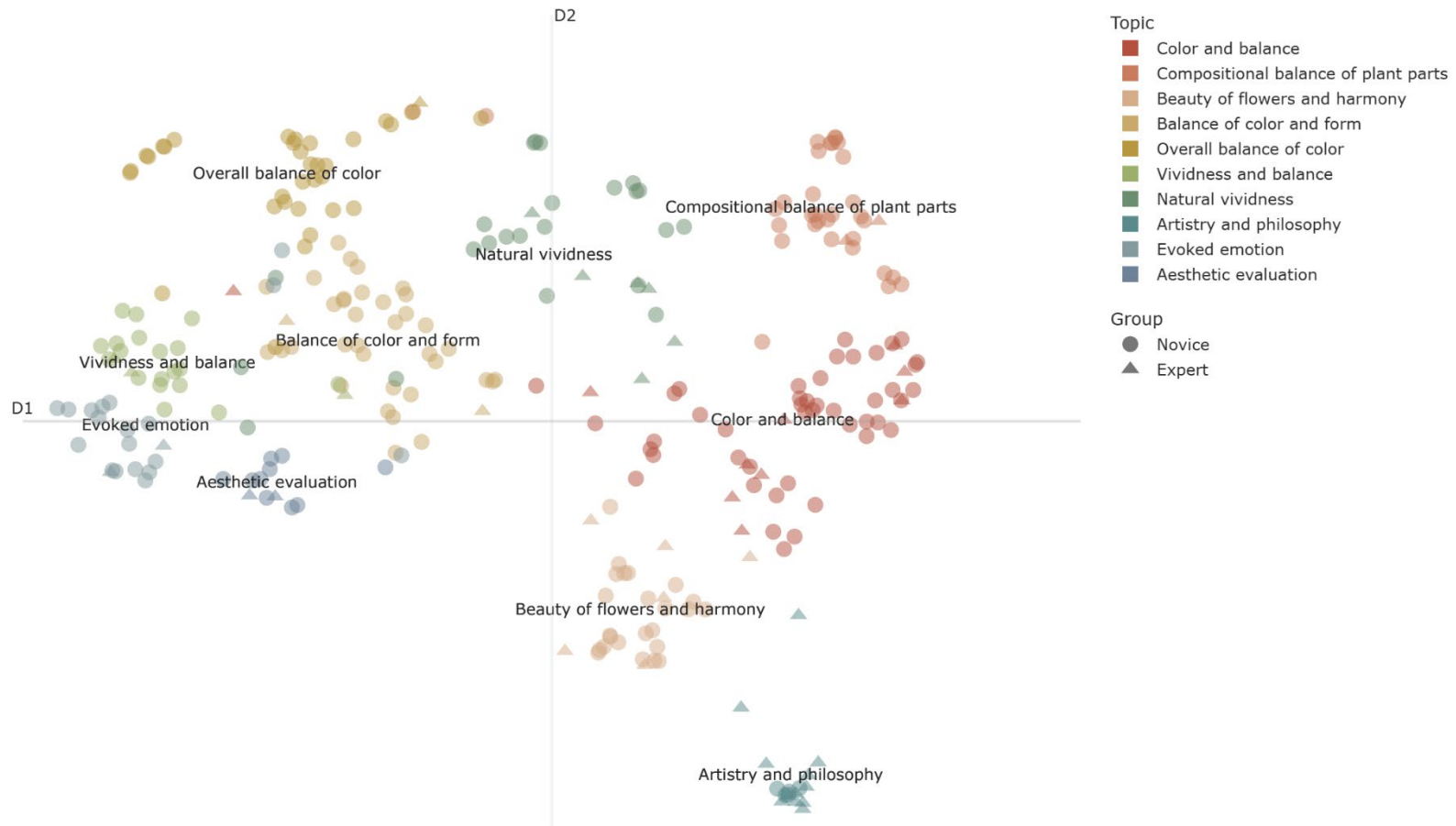


Figure S3

Hierarchical Clustering of BERTopic Topics

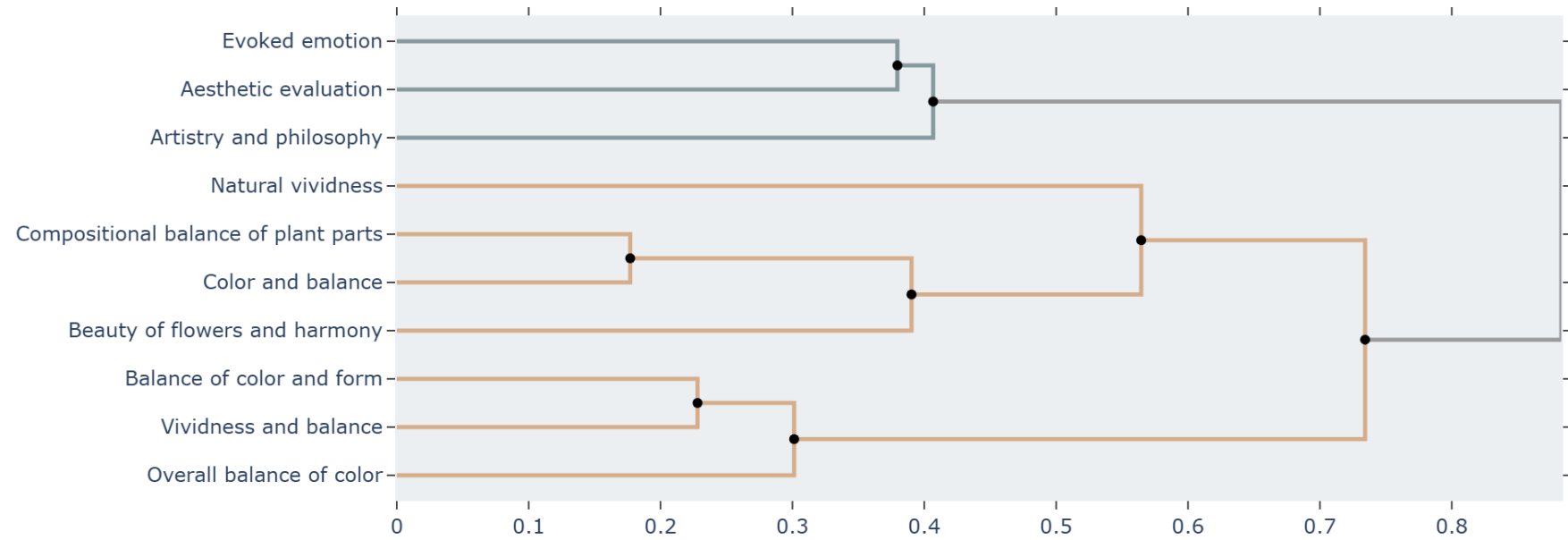


Figure S4

Correspondence Analysis of Words by Expertise Level

