

THE EMOTION-EXPERIENCE TOUCHPOINT PATHWAY CANVAS: INTEGRATING EMOTION REGULATION THEORY INTO TOUCHPOINT DESIGN

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ABSTRACT

In the context of the burgeoning experience economy, emotion has emerged as a key driver of design success. Under the critical research topic of Experience Design, Emotional Design is increasingly recognized as a core pathway to enhance user experience and brand value. While existing research has explored aspects such as structural modeling and emotion measurement, a systematic approach for translating emotions into actionable design strategies remains elusive.

This paper aims to construct a pathway model that translates emotional meta-levels into touchpoint design guidance. By integrating six existing touchpoint classifications, one emotional recording and categorization framework, and two theoretical models of emotional application in design, it reveals gaps in existing theories and methodological models. This foundation informs the development of an "Emotion-Experience Touchpoint Pathway Canvas (ETPC)." The validation through an art therapy experience design project for community seniors demonstrates the canvas's effectiveness in identifying emotional pain points, optimizing experience touchpoints, and enhancing users' emotional engagement. This research enriches the theoretical framework of emotion design and provides an actionable design framework for emotion-driven experience innovation.

Keywords: Experience Design, Emotional Experience, Touchpoint Design, Path Model

I INTRODUCTION

1.1 The Value of Emotion and Touchpoints in Experience Design

In recent years, the rapid development of the experience economy and emotion economy has made emotional and affective responses an indispensable component of economic activities [1]. Emotion refers to the process of individual interaction with a situation and the state an individual experiences during this process. Unlike sentiment, which emphasizes stable, profoundly social significance, emotion is highly contextual, intense, and transient [2]. In the context of design research, it can serve as the foundation for dynamic user analysis and can influence users' physical and mental health and vision [1]. It helps users form positive cognition and emotional connections, making it an indispensable component of user experience [3].

Within the research context of design, touchpoints are defined as specific moments of interaction or contact between individuals or groups and products, services, or systems within the context of design and participatory activities [4]. They are not merely equivalent to "channels" or "media", but encompass diverse encounters that constitute the smallest contextual units forming the overall experience [5]. Different touchpoints are key elements composing the user experience, where customers' experiences at these points can encompass multiple dimensions including perception, emotion, and cognition [6]. By mapping emotions to touchpoints, businesses can identify pivotal moments that trigger positive or negative sentiments, thereby optimizing the customer journey to foster emotional engagement and resonance [7]. This reveals that both emotions and touchpoints share an immediacy of semantic character, maintaining a tightly oriented relationship within experiential contexts where they play critical roles.

1.2 The Tool for Translating Emotional Outcomes into Touchpoint Design Is Missing

Existing emotional theory frameworks primarily focus on measurement and annotation. For instance, Russell's circular model [8] maps emotional states within a two-dimensional space. Research indicates that existing emotional theory applications predominantly present macro-level theoretical frameworks, with paradigms often confined to single-scenario workflows. There remains an urgent need for operational, emotion-priority touchpoint design tools that establish universal pathway paradigms [9]. Building upon the aforementioned relationship between emotions and touchpoints, translating emotional outcomes into stage-specific touchpoint design strategy pathways could enhance and complement the field of universal emotional design paradigms. This paper therefore introduces the ETPC, which systematically and rule-based maps emotion regulation theory onto touchpoint types, experience stages, and executable design strategies. This enables designers to prioritize interventions at touchpoints with the greatest emotional impact across diverse projects, even within resource-constrained contexts.

2 RECONSTRUCTION OF EXISTING CONTACT CLASSIFICATION AND EXTRACTION OF ELEMENTS FROM EMOTION THEORY RESEARCH MODELS

2.1 Experience Design Touchpoint Classification Framework

By synthesizing existing representative touchpoint classification methods, this framework provides a classification basis and support for touchpoint research. Based on Norman's affective design model—comprising the affective, behavioral, and reflective layers—affective layer design focuses on delivering intuitive emotional effects to customers; behavioral layer design emphasizes experiential operations, bringing users enjoyment and efficiency in usage; reflective design centers on experiential meaning, offering users deeper emotional experiences [10]. The original touchpoint classifications are restructured and integrated based on contextual functions into four categories: Emotion-Arousal Touchpoints, Emotional Action-Feedback Touchpoints, Emotional Social-Empathy Touchpoints, and Emotional Reflective-Constructive Touchpoints. These are mapped to the three stages of the customer journey in experience design: Pre-experience, Mid-experience, and Post-experience [6].

The first type is the Emotion-Arousal Touchpoints, primarily present during the Pre-experience and Mid-experience stages. It establishes the user's core emotional state through cue activation, triggering primal emotions at the instinctual level. Rapid emotional arousal is achieved via sensory elements such as visuals, sounds, scents, and textures. Norman's theory of emotional design instincts and Bitner's service landscape research [11] both corroborate this perspective. Physical touchpoints [12], landscape modelling touchpoints [11], and digital touchpoints [12] fall under this category. Examples include tangible elements such as products, equipment, and environments. At this stage, digital touchpoints primarily refer to the system's visual display components.

The second type is Emotional Action-Feedback Touchpoints, primarily occurring during the Mid-experience stage. These touchpoints manifest in system operations, service interactions, or process feedback segments, regulating user emotions through factors like interaction efficiency, usability, and controllability. Composed of interaction touchpoints [13] and digital touchpoints [12], they emphasize operational fluidity, embodying the core mechanism of "dynamic touchpoint feedback" in customer journey research. Interaction touchpoints encompass nodes where customers engage with service providers throughout the service journey. This also includes digital touchpoints such as mobile apps and web platforms—screen-based digital systems representing dynamic interaction efficiency.

The third type is Emotional Social-Empathy Touchpoints, this type of touchpoint can span all stages of the experience. Integrating the social-emotional dimension between behavioral and reflective layers, relational meaning is jointly formed by product-society relationships, others' opinions, and experiential memory, primarily corresponding to interpersonal touchpoints [12]. Through service personnel's behavior, attitude, and communication cues, it shapes users' trust, respect, and sense of belonging [15]. Interpersonal touchpoints are categorized into direct and indirect interpersonal contact points, analyzed through stakeholders.

The fourth type is the Emotional Reflective-Constructive Touchpoints, primarily occurring in the Post-experience stage. Reflection touchpoint design should encompass all categories of Post-experience touchpoint design, including physical, digital, interpersonal, and environmental touchpoint types that

facilitate users' retrospective meaning-building of emotions during the later stages of the experience. Unlike immediate emotional response touchpoints, reflection touchpoints primarily focus on users' summarization of emotions and cognitive transformation after the experience, aligning with the reflection layer proposed by Norman.

2.2 Emotion Theory Research Model

2.2.1 Emotion recording and classification framework model

The Geneva Emotion Wheel (GEW), proposed by Scherer and colleagues, captures human subjective emotional experiences in specific contexts [16]. As shown in Figure 1. This model is based on two core dimensions—valence and control power. It organizes 20 basic emotion families within a circular space, includes classification for "no emotion" and "other emotions" [17]."

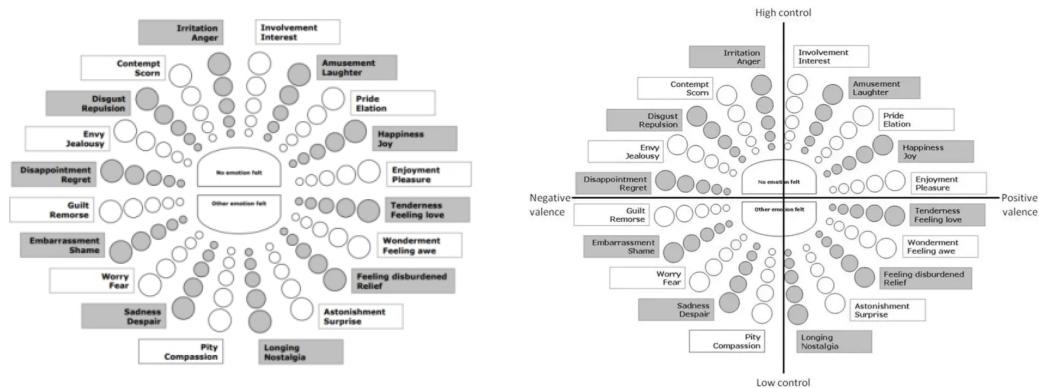


Figure 1. Overview of the Geneva Emotion Wheel [16], [17]

2.2.2 Theoretical models of emotions in design applications

This paper collects two representative theoretical models for the application of emotions in design. The most critical application model is Gross's expanded process model of emotion regulation. The Extended Process Model of Emotion Regulation aims to systematically understand and regulate emotional responses while providing practical guidance for designers. This model expands upon Gross's earlier Emotion Regulation Process Model. Building on the original five strategies—situation selection, situation modification, attentional deployment, cognitive change, and response modulation—it further emphasizes that emotion regulation occurs not only during the initial emergence of emotions but also throughout an individual's long-term emotional management. It posits that emotion regulation is a cyclical, dynamic system [18]. Designers can leverage these multidimensional factors, combined with Norman's framework of instinctive, behavioral, and reflective layers of emotion processing, to select appropriate intervention strategies for different emotional responses. They should then evaluate the effectiveness of these strategies and iterate through reflection.

2.2.3 Emotion theory model element extraction and integration

Gross's extended process model of emotion regulation forms the core framework of this pathway, providing a systematic logical structure for the design of the model canvas. Norman's hierarchical model of emotion offers insights for modifying touchpoint categories. Concurrently, Customer Journey Mapping (CJM) enables the visualization of user touchpoint information. This approach serves as an effective method for extracting and analyzing touchpoint data [19], providing tool support for phased mapping in subsequent research.

Building upon this foundation, this study adopts the GEW as the primary reference model for emotional classification. Its operational feasibility, quantifiability, and cross-cultural stability make it well-suited for capturing typical emotional responses within service journeys, particularly in small-sample, qualitative research. By employing intuitive vocabulary and streamlined procedures, the GEW reduces the burden on designers while enhancing research efficiency and translational applicability.

3 THE EMOTION-EXPERIENCE TOUCHPOINT PATHWAY CANVAS

Building upon the theoretical integration presented earlier, this study constructs the ETPC. This canvas comprises four phases, serving as an experience design analysis and intervention tool with Gross's Emotion Regulation Extension Model at its methodological core. It systematically translates psychological variables from emotion science into designable experience touchpoints. By identifying, categorizing, and regulating user emotional touchpoints while mapping them to distinct stages of the user journey, it establishes connections between emotional mechanisms and design interventions. This empowers designers to visualize and operationalize emotional regulation in practice, rapidly generating touchpoint design strategies, as shown in Figure 2:

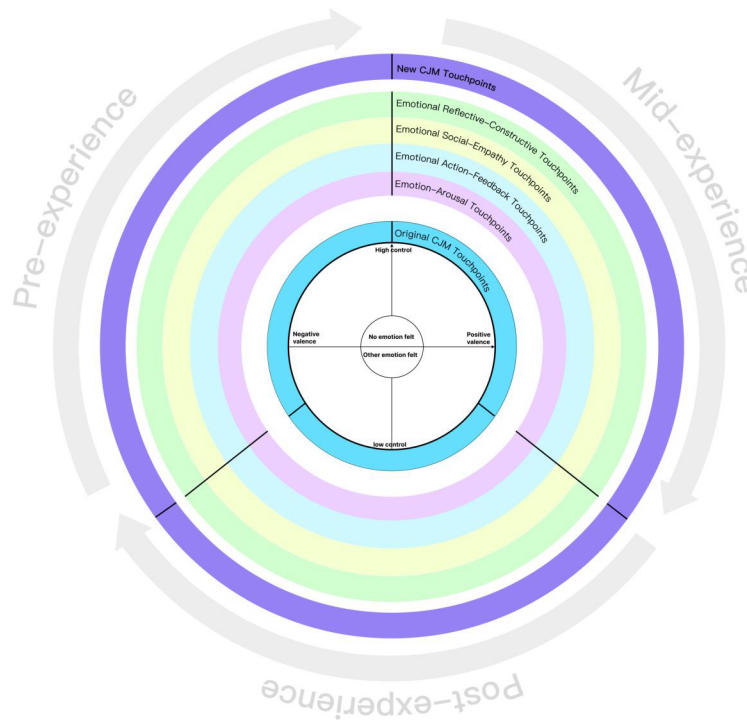


Figure 2. ETPC System Overview Diagram

Figure 3 presents the visualization applications of tools across four stages. The subsequent sections describe the application and operational methods for each stage.

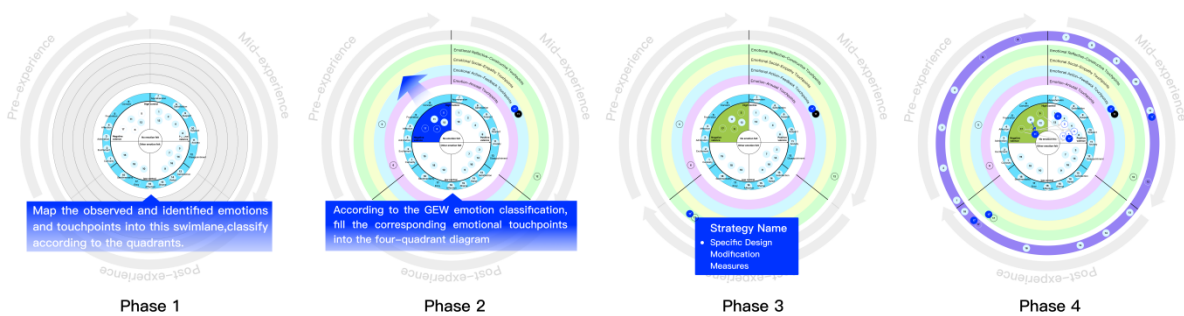


Figure 3. ETPC Four-Phase Presentation Diagram

3.1 Phase 1: Emotional Touchpoints Identification and Cross-Model Labelling

During the touchpoint inventory and cross-model sentiment annotation phase, the user experience journey is first divided into three segments—Pre-experience, Mid-experience, and Post-experience—based on the three-stage structure of the customer journey model. This enables systematic identification and classification of touchpoints across the entire process. This study maps existing touchpoints to specific physical and virtual delivery formats, ensuring the model supports design activities across multiple online and offline categories. Solid lines represent offline touchpoints, while

dashed lines denote online touchpoints, mapped within the original touchpoint lanes. Subsequently, the GEW serves as the core tool. Referencing its 20 emotion families, we qualitatively label emotions expressed by users at different touchpoints and place them within the GEW's four quadrants.

3.2 Phase 2: Focusing and Classification Optimisation of Negative Valence and High Control Sense Emotion Touchpoints

GEW categorizes emotions into four quadrants. Based on the meaning and division of its core dimensions, the "Negative Valence and High Control" quadrant emerges as the key priority area for design interventions, for the following reasons: The "Positive Valence and High Control" quadrant represents users experiencing smooth, highly controllable positive emotions. Here, interventions need only reinforce pleasant experiences and extend positive cycles through touchpoints. Emotions in the "Negative Valence and Low Control" quadrant offer limited immediate effectiveness for design interventions, as users lack self-regulation capacity and engagement willingness, requiring long-term support for improvement. While emotions in the "Positive Valence and Low Control" quadrant are positive, they are predominantly triggered by external events and stimuli. Designers struggle to consistently induce or precisely replicate these states, making them unsuitable as short-term, controllable intervention targets. Designers should first focus on key touchpoints within the "Negative Valence and High Control" quadrant. Pekrun (2006) notes that the fundamental components of regulation involve recognizing and understanding one's own emotions, and the feasibility of emotional regulation depends on an individual's subjective sense of control [20]. Consequently, touchpoints within this emotional state may easily trigger negative user experiences. However, individuals typically retain a relatively high sense of subjective control and willingness to regulate in this state, not yet entering a state of complete emotional loss of control or avoidance. This makes such touchpoints more amenable to design intervention. After focusing on this quadrant, designers can categorize touchpoints within it and place them into the corresponding emotional touchpoint classification lanes.

3.3 Phase 3: Translation and Design Implementation of Emotional Touchpoint Modification Strategies

During the implementation and design translation phase of emotion touchpoint modification strategies, this study employs Gross's Emotion Regulation Extension Model as its methodological framework, emphasizing that different types of emotion touchpoints require corresponding emotion modification strategies, as shown in Table 1. For Emotion-Arousal Touchpoints, which are predominantly distributed before and during the initial stages of the experience, they stimulate users' first impressions and initial emotional responses. Strategies such as "Situation Selection", "Situation Modification", and "Attentional Deployment" are suitable for application. For Emotional Action-Feedback Touchpoints, concentrated in the middle stage of the experience and directly linked to user interactions, "Situation Modification", "Attentional Deployment", and "Response Modulation" are more appropriate. Designers can optimize user experience emotions by implementing clear operational feedback, progress indicators, or instant emotional buffering mechanisms. For emotional social empathy touchpoints, encompassing interpersonal interactions and service exchanges, "Cognitive Change" and "Response Modulation" strategies are suitable for reshaping users' emotional experiences. For Emotional Reflective-Constructive Touchpoints, which primarily occur after the experience concludes, emphasizing users' retrospective review and meaning-making of the entire journey, "Cognitive Change" and "Situation Modification" strategies are more suitable. By applying these differentiated strategies to the four types of emotional touchpoints, designers can achieve precise emotional intervention at different experience stages, driving effective translation and optimization of the emotion-experience touchpoint pathway. Designers should select corresponding emotion modification strategies based on touchpoint classifications, redesign touchpoints according to specific strategy measures, and annotate strategy names alongside modification actions. If new touchpoints are added to existing modification points, mark them with a different color and indicate the number of new additions next to the original touchpoint sequence number.

Table 1. The Five Strategies of Gross' s Emotion Regulation Process Model and Their Corresponding Categories of Emotional Touchpoints [21]

Strategy Name	Detailed Explanation	Corresponding Types of Emotional Touchpoints
Situation Selection	Preventing or triggering specific emotions by choosing or avoiding particular situations	Emotion-Arousal Touchpoints
Situation Modification	Influencing emotional outcomes by altering conditions or elements of the external environment	Emotion-Arousal Touchpoints, Emotional Action-Feedback Touchpoints, Emotional Reflective-Constructive Touchpoints
Attentional Deployment	Controlling the processing of emotional stimuli through diversion or focused attention	Emotion-Arousal Touchpoints, Emotional Action-Feedback Touchpoints
Cognitive Change	Adjusting emotional responses by altering the cognitive interpretation of situations	Emotional Social-Empathy Touchpoints, Emotional Reflective-Constructive Touchpoints
Response Modulation	After an emotion arises, regulate its intensity by adjusting behavior, expression, or physiological response	Emotional Action-Feedback Touchpoints, Emotional Social-Empathy Touchpoints

3.4 Phase 4: Reflective Cycle and Cross-Round Iterative Evaluation

This study adopts the three-stage framework of Gross's Emotion Regulation Extension Model—identification, selection, and implementation—with a feedback reflection loop following implementation as its core methodology. Specifically, during the "reflection iteration" phase, designers should remap intervention outcomes onto the ETPC. By comparing pre- and post-intervention trajectories, they clarify design transformation effectiveness. If the revised touchpoint's emotional annotation remains within the "Negative Valence and High Control" quadrant, redesign is required. Upon completion, the modified touchpoint is mapped to the outermost swimlane according to the experience stage sequence, determining whether to enter a new cycle. It is important to note that this iterative process is not a purely linear feedback loop. Instead, it emphasizes that designers must simultaneously absorb user feedback, empathically form insights, and align with business objectives during each reflection.

4 ILLUSTRATING THE APPLICATION OF THE ETPC USING AN EXPERIENCE DESIGN PROJECT AS AN EXAMPLE

This research employs the "AIGC Elderly Group Art Therapy Support Toolkit" design project as a practical case study. Centered on emotional healing and social reconnection for the elderly, this case validates the feasibility and applied value of its practical implementation pathways within experiential design work. This project is a community pilot study involving 10 elderly community members aged 65 – 73 as experiential observers, comprising 6 women and 4 men. Additionally, 2 social workers and 1 volunteer assisted with implementation and interview documentation. This sample size represents a convenience sample primarily for illustrative methodological application rather than statistical inference. All participants signed written informed consent forms prior to participation and were informed of data usage, anonymization procedures, and their right to withdraw consent.

As shown in Figure 4, through desktop research and offline community field visits and observations, the designer combed through the CJM the whole process of experience from the elderly receiving information and enrolment, on-site participation, and healing retrospectives, and a total of 18 touchpoints were recorded and identified, including 4 online touchpoints. GEW emotion annotation

was completed through a combination of designer interviews and self-assessment by elderly participants.



Figure 4. Community Elderly Art Healing Experience Touchpoint Identification and Inventory

To enhance the emotional conversion efficiency and design effectiveness for elderly users, this project focuses on optimizing touchpoints within the "Negative Valence and High Control" quadrant. As shown in Figure 5, after designers annotated touchpoints and their corresponding emotions, they categorized touchpoint emotions into quadrants within the ETPC framework. This revealed the following touchpoints appearing in the "Negative Valence and High Control" quadrant: During the Pre-experience stages, elderly users experienced confusion and disappointment due to the complex WeChat Mini Program interface and lack of social worker communication; During the Mid-experience stage, they felt frustrated and confused due to poor environments and inadequate guidance; In the Post-experience stage, they experienced anxiety and unease caused by interrupted psychological service chains and online displays. This study did not identify any touchpoints categorized as "no emotion" or "other emotions". After classifying touchpoints by corresponding emotional types, designers proceeded to Stage Three tasks.

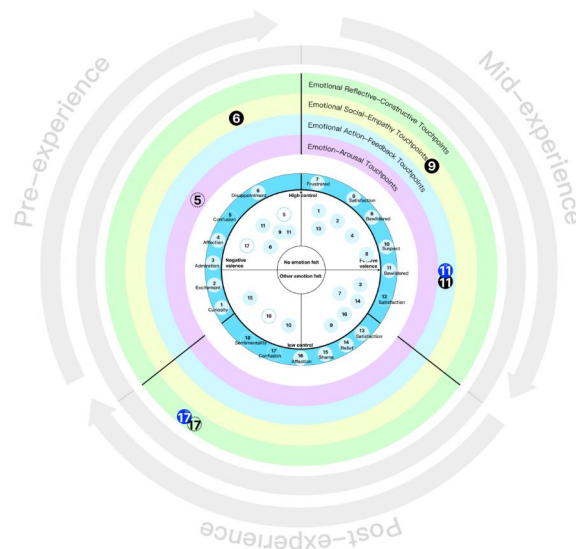


Figure 5. Process Flowchart for Contact Point Focusing and Classification Optimization in the "Negative Valence and High Control" Quadrant

4.1 Modification of Emotional Touchpoints in the Pre-experience Stage

The touchpoints to be modified in the Pre-experience stages were classified as Emotion-Arousal Touchpoints and Emotional Action-Feedback Touchpoints. The designer used the situation modification and attentional deployment strategies to address the issue of applet touchpoints, adopting a simple visual layout to fit the visual perception characteristics of the elderly users and reduce the burden of identification. In terms of the functional hierarchy, it reduces the level jumping and strengthens the appointment information feedback. In terms of information density and colour scheme system, the text hierarchy is optimized, and the interface affinity and emotional stability are enhanced through mild tones and highly recognizable user interface colour schemes, as shown in Figure 6.

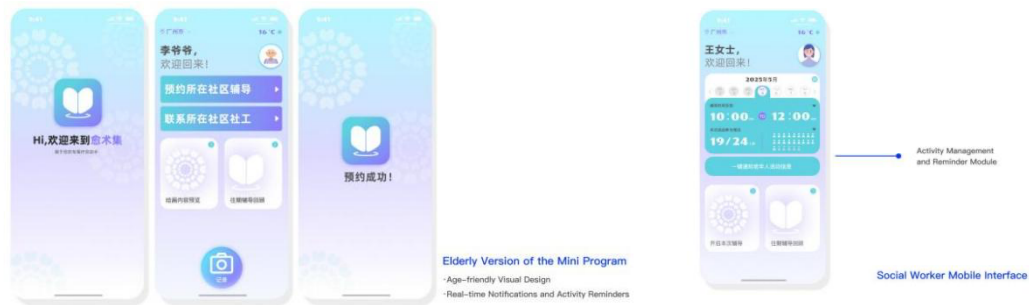


Figure 6. UI and Functional Design of the Senior Citizen Mini-Program and Social Worker Portal

Simultaneously, to meet the service needs of elderly individuals unfamiliar with or unable to use smart devices, designers have integrated offline reminder and support mechanisms into the system while restructuring information presentation methods. This ensures the accessibility and continuity of service information. For online platforms, an "Activity Management and Reminder Module" has been added to enhance seniors' sense of security and care throughout their experience.

4.2 Modification of Emotional Touchpoints in the Mid-experience Stage

The touchpoints to be modified in the Mid-experience stage belong to the Emotional Action-Feedback Touchpoints and the Emotional Reflective-Constructive Touchpoint, using the situation modification, attentional deployment and cognitive change strategies respectively. By designing a healing aid toolkit for community service workers, which contains a treatment calendar, psychological assessment card, AI healing ball, toolkit user manual, and aromatherapy candle, social workers can provide more professional healing support for the elderly through these, and enhance the sense of trust of the elderly, as shown in Figure 7.



Figure 7. Design of Social Worker Healing Support Toolkit and Healing Ball User Interface Diagram

The AI healing ball is also a new touchpoint under the situation modification strategy. It adopts a rounded spherical shape and soft-light material to symbolise the "emotion that can be held", realising one-to-one voice accompaniment and AI drawing guidance, and allowing social workers to control it instantly, thus enhancing the professionalism and accuracy of the healing process. At the same time, the attentional deployment strategy is used to guide the elderly to shift their focus from the result of the work to the drawing process itself by adding textual hints on the drawing paper and combining it with verbal guidance from the social worker. This modification helps to alleviate their anxiety about the outcome and strengthen their concentration and emotional engagement, thus enhancing the process experience and psychological benefits of drawing therapy.

Under the cognitive change strategy, after the painting is completed, the social worker reminds the user and the shooting interface directly prompts the user to "record your emotional moment" instead of simply "take a picture of your work". Users were also allowed to edit the description of their work to reinterpret and reconstruct the meaning of their creation.

4.3 Modification of Emotional Touchpoints in the Post-experience Stage

The Post-experience stage requires modification of the touchpoints that are part of the Emotional Reflective-Constructive Touchpoints, using cognitive change and response modulation strategies. Elderly participants can continue identifying emotions through their mobile phones after returning home. Based on the image recognition and analysis function of AI, a narrative guidance function is set up to assist elderly people in analysing their self-psychological efficacy. The online platform adds an "anonymous display" or "process display" mode to reduce the pressure of comparison. This process can also be done by proxy through family members.

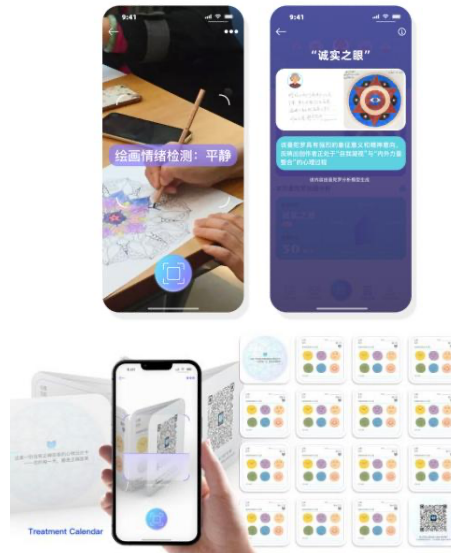


Figure 8. Image Recognition and Narrative Guidance Function with Diagnosis and Treatment Calendar Design

At the same time, the social worker distributes treatment calendars so that the elderly can record their emotions at home, and the cards have already recorded self-training methods for adjusting to different emotions, so that in the face of negative emotions that have already occurred, they can adjust their physical and behavioural responses to alleviate or control them, corresponding to the response modulation strategies. Elderly people who are more familiar with digital devices can also scan the code for emotional diagnosis and reading, as shown in Figure 8.

4.4 Reflective Iteration and Closed-Loop Delivery

Following the steps outlined in Phase Four, designers subjected the newly added touchpoints to comprehensive user experience testing. Results indicated that the emotional mapping for the AI healing ball touchpoint fell short of expectations, with some elderly users exhibiting reactions of "disappointment" and "confusion". Consequently, designers simplified its interaction functions and operational logic to enable proactive communication guidance, reduce cognitive load, and enhance operability. Table 2 presents a comparison before and after improvements, where initiating interaction with the healing ball to successfully guiding seniors into conversation constitutes a single task unit. The revised AI healing ball touchpoint now maps user GEW emotion annotations to satisfaction and keen interest. All other touchpoint modifications met design objectives. Ultimately, designers unified the original, modified, and newly added touchpoints into a new CJM swimlane, forming a complete application loop.

Table 2. Comparison of Pre- and Post-Iteration Performance and Emotional Metrics of the AI Healing Ball

Metric	Before Iteration	After Iteration	Improvement Note
Average Steps to Complete a Task	6 steps	3 steps	Simplify the operation process by reducing the number of buttons and prompt levels
Average completion time	98 seconds	64 seconds	Enable AI to initiate voice interactions, with visual light strips flashing to guide seniors through the operation

Metric	Before Iteration	After Iteration	Improvement Note
Subjective comprehension level	2.3	4.4	By simplifying operational procedures and upgrading proactive interactions, older adults experience enhanced self-control
Emotional Valence	Low	High	The AI ball actively guides to build trust, transforming disappointment and confusion into satisfaction and keen interest

5 ANALYSIS AND PROSPECTS

This study proposes and applies the ETPC, demonstrating its research and application value at the intersection of experience design and emotion studies. Building upon Gross's Emotion Regulation Extension Model, it incorporates tools like GEW to seamlessly integrate touchpoint identification, emotion classification, and regulation strategies. This methodological innovation overcomes the limitations of previous emotion research, which often leaned toward quantitative or single-dimensional approaches, emphasizing the process-oriented and contextual nature of emotions in design work. Compared to traditional approaches like service blueprints and user journeys, ETPC's uniqueness lies in its emotion regulation perspective, prioritizing "Negative Valence and High Control" emotion touchpoints identified via GEW as key intervention nodes. This mechanism provides new leverage for design decisions, enabling designers to precisely locate emotional bottlenecks within complex experience systems and achieve an actionable, universal translation from emotional perception to touchpoint design interventions.

This study also has certain limitations. The restricted scope of the user sample limits the generalizability of the findings. Regarding the selection and application of emotional strategies, interdisciplinary theoretical support remains insufficient, and contextualized intervention methods require further refinement. Additionally, while ETPC is constructed based on GEW and primarily focuses on goal-oriented utilitarian emotions, some touchpoints in the case studies involve aesthetic emotions. This suggests the tool is better suited for functional and regulatory emotions, with potentially limited capture of aesthetic experiences. Future research could enhance the method's robustness and applicability by expanding empirical scope and integrating multidisciplinary theories from psychology and sociology. Incorporating aesthetic evaluations could enrich emotional annotation metrics. The framework could also be provided to corporate design departments to validate its design conversion rates from a commercial perspective. Addressing these issues in future studies would enable optimization and extension of this canvas.

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