

How Does Love Poetry Move the Heart? Effects of Cues and Experience on Emotion Learning from Classical Poetry

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Abstract

[Objective] Chinese classical poetry serves as a typical vehicle for emotional expression. This study investigates the influence of cues and experience on emotional learning of classical poetry. [Method] Experiment 1 employed a between-subjects design of 2 (cue type: key information cue vs. secondary information cue) \times 2 (annotation: with annotation vs. without annotation). Experiment 2 further examined whether differences exist between high- and low-experience learners in emotional learning of classical poetry. [Results] Key information cues and annotations enhanced both the accuracy of emotional comprehension questions and the perceived intensity of poetic emotion. Presentation of key information cues intensified the emotional experience for low-experience learners; however, no significant differences were observed in the emotional intensity perceived by high-experience learners across different cue conditions. [Limitations] The classical poetry learning materials were limited to a single type. [Conclusion] This study provides the first evidence that cues and experience influence emotional learning of classical poetry, establishing an empirical foundation for theoretical construction of classical poetry emotional processing.

Full Text

Why Do Love Poems Move Us? The Effects of Cues and Prior Knowledge on Emotional Learning from Ancient Poetry

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Abstract

[Objective] Chinese classical poetry serves as a quintessential vehicle for emotional expression. This study investigated the effects of cues and prior knowledge on emotional learning from ancient poetry. **[Methods]** Experiment 1 employed a between-subjects design with 2 cue types (key information cues vs. secondary information cues) \times 2 annotation conditions (with annotations vs. without annotations). Experiment 2 further examined whether learners with high versus low prior knowledge differ in emotional learning from ancient poetry. **[Results]** Key information cues and annotations improved both accuracy on poetry emotion questions and perceived emotional intensity. Presenting key information cues made low-experience learners perceive stronger poetic emotions, whereas high-experience learners showed no significant differences in perceived emotional intensity across different cue conditions. **[Limitations]** The poetry learning materials were limited to a single piece. **[Conclusion]** This study is the first to demonstrate that cues and prior knowledge influence emotional learning from ancient poetry, providing an empirical foundation for theoretical construction of ancient poetry emotional processing.

Keywords: Chinese classical poetry, Emotion, Cues, Prior knowledge

Poetry is one of the earliest literary forms in human history and a quintessential vehicle for emotional expression. Emotions contain many subtle twists and turns that can be faintly perceived yet cannot be directly described in language. These images, thoughts, and sentiments that are beyond words but within consciousness can never be fully and directly expressed. The unique function of poetry lies in using parts to hint at the whole, evoking the imagery and interest of an entire situation through fragmentary scenarios, thereby achieving effects of “implicitness,” “meaning beyond words,” and “emotion overflowing diction” (Zhu, 1987). Chinese classical poetry encompasses both the vastness and profundity of embracing the universe and the delicate, multifaceted nature of nurturing all things, representing a cultural treasure of the Chinese nation. Lyricism is one of the most prominent features of traditional Chinese literature, with poetics regarding emotion as the soul of lyrical works. Many literary theorists also use lyric poetry as the primary basis for understanding lyrical literature. The Southern Dynasties scholar Zhong Rong believed that writing poetry could “unleash one’s emotions” and relieve “solitary melancholy.” Lu Ji stated in *Wen Fu*: “Poetry originates from emotion and is ornate in expression.” Liu Xie praised the *Airs* and *Elegances* for “chanting one’s nature and feelings” and “creating literature for emotion,” while criticizing some Han dynasty fu authors for “lacking genuine emotion” and “creating emotion for literature.” The *Preface to the Mao Shi* posited that the primary purpose of poetry is “when emotion moves within, it takes shape in words.”

Chinese classical poetry serves as a medium for ancient poets to express emotions, yet their emotional expression is mostly implicit. How can contemporary

readers touch the poet' s inner world through merely twenty-some characters and resonate with scholars from hundreds or thousands of years ago? Contrast represents one of the fundamental compositional methods in lyrical discourse, combining words with opposite sensory features or symbolic meanings to create juxtaposition that enhances expressive power. For instance, in *The Book of Songs · Cai Wei*: “When I left, willows swayed gently; now I return, snow and rain fall thickly.” The first two lines use joyful scenery to express sorrow, while the latter two use sorrowful scenery to express joy. Combining emotion and scene through contrast can more powerfully convey emotional experiences (Tong, 2004). This study is the first to examine the lyrical technique of contrast, investigating how learners emotionally process ancient poetry that employs “joyful scenery to set off sorrowful emotion.”

Previous research on emotional experience in texts has primarily focused on sentences and discourse in vernacular Chinese, with few studies examining emotional processing of poetry. For example, Gernsbacher et al. (1992) used emotional short stories with key sentences that either matched or mismatched the protagonist' s emotional state. They found longer reading times for emotionally mismatched sentences, suggesting that readers can infer characters' emotional states. Through matched and mismatched emotional words, they further demonstrated that readers' emotional inferences can be specific to particular emotions (e.g., guilt, joy). Zhang Jinlu et al. (2014) investigated how discourse topic structure influences emotional comprehension, finding that readers automatically infer emotions during comprehension and that topic structure itself affects emotional understanding. Zhang Xiuping et al. (2017), reviewing existing discourse emotion processing research, noted that although many models of discourse comprehension have been proposed, none directly address emotional understanding in discourse. They suggested that emotional understanding in discourse involves two processes: monitoring emotional information and evaluating/updating emotional information. However, whether this model applies to the special text type of ancient poetry remains to be verified. As a unique and traditional textual material rich with abundant and diverse emotions, how do readers psychologically process emotions in ancient poetry? Foreign scholar Lüdtke et al. (2014) argued that most poetry research focuses on features like meter and rhyme while rarely examining the empathic responses and emotional engagement generated by poetry comprehension. They proposed the emotional empathy hypothesis and tested it. Using mixed-effects regression and linear models, they found that background elements like familiarity and context promote emotional engagement, while foreground features like style and form enhance aesthetic evaluation. Chinese classical poetry is a quintessential vehicle for emotional expression, with poetics regarding emotion as the soul of lyrical works. However, psychological research on emotional processing of Chinese classical poetry is virtually nonexistent.

Ancient Chinese poetry encapsulates vast worlds within mere inches, with short texts of just twenty-some characters containing substantial information. How to guide learners to process important information more effectively to facilitate

emotional learning from ancient poetry represents a significant research question. Cueing refers to an instructional design approach in multimedia learning that uses non-content information (e.g., color, arrows, flashing) to capture learners' attention and guide them toward key information, thereby promoting learning outcomes (De Koning et al., 2007, 2009). Cues function to direct learners to process information at specific locations while ignoring irrelevant distractions. Cueing important information facilitates information selection and enhances comprehension of that content (Wang Fuxing et al., 2013). However, while cues alone do serve an attention allocation function, they do not necessarily help learners engage in deep processing of materials, as their effectiveness is moderated by numerous variables (see meta-analysis: Xie Heping et al., 2016). Instructional guidance—supportive and directive content designed for learning materials—may compensate for this limitation and enhance cueing effects. Previous multimedia learning research on instructional guidance is limited but relatively consistent, suggesting that instructional guidance promotes learners' active processing and meaningful learning (Xie Mengyuan, 2019). In ancient poetry emotional learning, supplementary annotation information can facilitate learners' deep understanding of poetry. In this study, we define annotation information in ancient poetry learning as instructional guidance for ancient poetry. Therefore, Experiment 1 is the first to introduce both the attention-guiding function of “cues” and the comprehension-enhancing function of “instructional guidance” into ancient poetry emotional learning research, further investigating how emotional information within ancient poetry texts that learners attend to and process, along with annotation information outside the poetry texts, affect the accuracy and intensity of emotional learning from ancient poetry. **Hypothesis 1:** When key information cues and instructional guidance are presented, readers will demonstrate higher accuracy in understanding poetic emotions and stronger perceived emotional intensity. When secondary emotional information cues and instructional guidance are presented, readers will show lower accuracy in understanding poetic emotions and weaker perceived emotional intensity.

Attending to every student represents an eternal theme in education. How to “teach according to individual aptitude” for learners with different levels of ancient poetry knowledge and experience constitutes the second focus of this study. Qian Zhongshu once stated: “In learning poetry and the Way, one cannot progress without enlightenment. Yet enlightenment, called ‘wonderful,’ cannot be achieved in a single step; it comes from broad learning leading to comprehension, and diligent exploration leading to insight.” Zhu Guangqian clearly illustrated the important role of readers' knowledge and experience in poetry appreciation with the formula: “Meaning beyond words = meaning within words + reader's breadth of mind and learning.” Similarly, the individual differences principle in multimedia learning posits that prior knowledge is a crucial factor affecting cognitive processing of multimedia information. The influence of prior knowledge on learners also manifests in the expertise reversal effect, which emerges from interactions with individual learner characteristics (Mayer, 2009). The expertise reversal effect refers to the phenomenon where novices

achieve higher learning performance with additional instructional information than without it, whereas experts show the opposite pattern—additional information significantly impairs their learning performance (Rey & Buchwald, 2011). Therefore, in ancient poetry emotional learning, different instructional designs may affect high- and low-experience learners differently. Experiment 2 further considers learners' knowledge and experience levels in ancient poetry, examining for the first time how learners' prior knowledge influences emotional learning from ancient poetry. Based on the expertise reversal effect, **Hypothesis 2:** When key information cues are presented, they will facilitate ancient poetry learning and produce stronger perceived emotions for low-experience learners, but will inhibit learning for high-experience learners.

Experiment 1: Investigating for the First Time How the Attention-Guiding Function of “Cues” and the Learning-Facilitating Function of “Instructional Guidance” Affect Learners' Emotional Learning from Ancient Poetry

2.1 Design

Experiment 1 used a between-subjects design with 2 cue types (key information cues vs. secondary information cues) \times 2 annotation conditions (with annotations vs. without annotations), plus a blank control group. The dependent variables were (1) accuracy on poetry emotion questions and (2) subjective ratings of poetry emotional intensity.

2.2 Participants

Fifty-three university students from a teachers' university were randomly selected. Four participants who responded carelessly were excluded, leaving 49 valid datasets. Based on a self-rating question of ancient poetry familiarity (using a 9-point Likert scale), participants with ratings higher than 5 were excluded, resulting in 48 valid participants (12 male, 36 female) with a mean age of 21 years ($SD = 1.14$). The groups consisted of: key information cues with annotations ($n = 9$), key information cues without annotations ($n = 10$), secondary information cues with annotations ($n = 9$), secondary information cues without annotations ($n = 10$), and blank control ($n = 10$). The four groups showed no significant differences in age, $F(4, 44) = 0.09$, $p > 0.05$, or gender, $\chi^2(4) = 2.98$, $p > 0.05$.

2.3 Materials

The ancient poetry materials consisted of five conditions: key information cues with annotations, key information cues without annotations, secondary information cues with annotations, secondary information cues without annotations, and blank control. Based on materials coded during the pilot phase by two

psychology majors who identified key emotions-key information and secondary emotions-secondary information pairings, a third experimenter marked key and secondary information cues according to coding frequency and standard answers. The final key cues were “low-winged white geese fly heavily,” “tongue-tied orioles cannot yet sing,” and “year after year, decay and illness diminish my mood.” Secondary cues were “rain just cleared,” “warmth returns and brightens,” “apricot blossoms,” and “duckweed grows.” Annotations provided Bai Juyi’s biographical and compositional background: “Annotation: Bai Juyi (772-846), courtesy name Letian, art names Xiangshan Jushi and Zuiyin Xiansheng. This poem was written in 817 CE (the twelfth year of the Yuanhe era), when the author had been demoted to the position of Jiangzhou Marshal.”

The poetry emotion question asked: “What emotions does this poem contain? Please summarize briefly in two or three sentences.” The scoring criteria were: total score of 6 points, with 2 points for each of three key aspects. For each aspect, correct meaning earned 2 points; similar meaning with correct positive/negative valence earned 1 point; incorrect valence earned 0 points. If key points were mentioned but the overall positive/negative valence was incorrect, 1-2 points could be deducted from the earned score. Two trained raters independently scored the questions, with final scores averaged across raters. Inter-rater reliability was 0.94 ($p < 0.01$).

Subjective ratings of poetry emotional intensity used a 9-point Likert scale with the prompt: “Please rate the intensity of emotion conveyed by this poem” (1 = extremely calm, 9 = extremely intense).

[Figure 1: see original paper] Learning materials for key information cues without annotations group

[Figure 2: see original paper] Learning materials for secondary information cues without annotations group

2.4 Procedure

Participants were randomly assigned to five groups: key information cues with annotations, key information cues without annotations, secondary information cues with annotations, secondary information cues without annotations, and blank control. In the instructions, participants were told to pay attention to the blue-colored emotional cues and annotation content while reading the ancient poetry. After reading the experimental poetry materials, participants completed the poetry emotion questions. Subsequently, they were asked whether they answered based on the blue emotional cues. Finally, participants completed subjective questions and provided demographic information.

2.5 Results

(1) Poetry Emotion Questions

The main effect of cue type was significant, $F(1, 34) = 9.20$, $p = 0.005$, $p^2 = 0.21$. The key information cues group scored higher than the secondary

information cues group (MD = 0.81, $p = 0.005$). The main effect of annotations was significant, $F(1, 34) = 79.03$, $p < 0.01$, $p^2 = 0.70$. The with-annotations group scored higher than the without-annotations group (MD = 2.36, $p < 0.01$).

The interaction between cue type and annotations was significant, $F(1, 34) = 24.16$, $p < 0.01$, $p^2 = 0.42$. Under the with-annotations condition, the key information cues group (M = 5.67, SD = 0.50) scored significantly higher than the secondary information cues group (M = 3.56, SD = 0.53), $t(16) = 8.72$, $p < 0.01$. Under the key information cues condition, the with-annotations group (M = 5.67, SD = 0.50) scored significantly higher than the without-annotations group (M = 2.00, SD = 0.94), $t(14) = 10.74$, $p < 0.01$. Under the secondary information cues condition, the with-annotations group (M = 3.56, SD = 0.53) scored significantly higher than the without-annotations group (M = 2.50, SD = 1.08), $t(17) = 2.66$, $p = 0.017$. Descriptive statistics are detailed in Table 1.

The key information cues with annotations group differed significantly from the blank control group, $t(15) = 9.60$, $p < 0.001$, $p^2 = 0.91$, with the key information cues with annotations group (M = 5.67) scoring significantly higher than the blank control group (M = 2.70). The secondary information cues with annotations group also differed significantly from the blank control group, $t(17) = 2.66$, $p = 0.016$, $p^2 = 0.53$, with the secondary information cues with annotations group (M = 3.56) scoring significantly higher than the blank control group (M = 2.70).

On the question of whether participants answered based on the blue emotional cues, the main effect of cue type was significant, $\chi^2(1) = 8.82$, $p = .003$. Under the secondary information cues condition, 58.8% of participants answered “yes,” whereas under the key information cues condition, 100% answered “yes.”

[Figure 3: see original paper] Experiment 1 poetry emotion question scores

[Figure 4: see original paper] Experiment 1 subjective ratings of poetry emotional intensity

(2) Subjective Ratings

The main effect of cue type was significant, $F(1, 34) = 10.73$, $p = 0.002$, $p^2 = 0.24$, with learners in the key information cues group reporting stronger perceived emotions (MD = 1.17, $p = 0.002$).

The interaction between cue type and annotations was significant, $F(1, 34) = 4.14$, $p = 0.05$, $p^2 = 0.11$. Under the key information cues condition, the without-annotations group reported significantly higher intensity (M = 7.70, SD = 0.95) than the with-annotations group (M = 6.67, SD = 0.71), $t(16) = -2.71$, $p = 0.015$. Under the without-annotations condition, the key information cues group reported significantly higher intensity (M = 7.70, SD = 0.95) than the secondary information cues group (M = 5.80, SD = 1.14), $t(18) = 4.06$, $p = 0.001$.

Table 1 Poetry emotion scores and subjective ratings across five experimental conditions in Experiment 1

Condition	Poetry Emotion Question	Emotional Intensity
Key cues with annotations	5.67+0.27	6.67+0.71
Secondary cues with annotations	3.56+0.27	6.22+1.48
Key cues without annotations	2.00+0.26	7.70+0.95
Secondary cues without annotations	2.50+0.26	5.80+1.14
Blank control	2.70+0.82	6.50+1.35

2.6 Discussion

When annotations were presented to learners, their scores were significantly higher than the no-annotations group. With annotations presented, key information cues facilitated ancient poetry emotional processing, whereas secondary information cues hindered it. When key information cues were presented, learners were attentionally guided by these cues, answered questions more based on them, and perceived stronger poetic emotions. Conversely, when secondary information cues were presented, learners did not believe they were attentionally guided by these secondary cues, yet their scores were significantly lower than the key information cues group, and their perceived emotional intensity was weaker.

Experiment 2: Further Considering Learners' Prior Knowledge Levels in Ancient Poetry, Investigating for the First Time How Learners' Knowledge and Experience Affect Emotional Learning from Ancient Poetry

3.1 Design

Experiment 2 used a between-subjects design with 2 cue types (key information cues vs. secondary information cues) \times 2 ancient poetry experience levels (high experience vs. low experience). The dependent variables were (1) accuracy on poetry emotion questions and (2) subjective ratings of poetry emotional intensity.

3.2 Participants

Thirty-six university students from a teachers' university were randomly selected. One participant who responded carelessly was excluded, leaving 35 valid datasets. Based on a self-rating question of ancient poetry familiarity (using a 9-point Likert scale), participants with ratings higher than 5 were excluded, resulting in 34 valid participants (6 male, 28 female) with a mean age of 21 years ($SD = 1.34$). High versus low ancient poetry experience was determined based on participants' academic major (whether in Chinese language and literature) and self-rating scores. The groups consisted of: key information cues

high-experience ($n = 7$), key information cues low-experience ($n = 10$), secondary information cues high-experience ($n = 9$), and secondary information cues low-experience ($n = 8$). The four groups showed no significant differences in age, $F(3, 30) = 0.36, p > 0.05$, or gender, $\chi^2(1) = 0.06, p > 0.05$.

3.3 Materials

The self-rating questions for ancient poetry experience were three items selected from Bao Yandan (2012)'s *Ancient Poetry Interest Questionnaire* (homogeneity reliability $\alpha = 0.76$): “How would you rate your ancient poetry knowledge level?” (1 = very low, 9 = very high), “How many ancient poems would you say you are familiar with or can recite?” (1 = <50 poems, 9 = >500 poems), and “Have you participated in poetry clubs or literary groups?” (1 = very low, 9 = very high). The poetry materials were identical to those used in Experiment 1.

3.4 Procedure

High- and low-experience learners were randomly assigned to either key information cues or secondary information cues conditions, yielding four experimental groups: key information cues high-experience, key information cues low-experience, secondary information cues high-experience, and secondary information cues low-experience. The experimental procedure was identical to Experiment 1.

3.5 Results

(1) Poetry Emotion Questions

The main effects of experience, cue type, and their interaction were all non-significant. Descriptive statistics are detailed in Table 2.

Table 2 Poetry emotion scores and subjective ratings across four experimental conditions in Experiment 2

Condition	Poetry Emotion Question	Emotional Intensity
Key cues high-experience	2.57+1.13	5.14+1.22
Secondary cues high-experience	2.22+1.30	5.89+1.36
Key cues low-experience	2.00+0.26	7.70+0.95
Secondary cues low-experience	2.63+1.19	5.88+1.25

(2) Subjective Ratings

The main effect of experience was significant, $F(1, 30) = 9.48, p = 0.004, p^2 = 0.24$, with low-experience learners rating emotional intensity significantly higher ($M = 6.79$) than high-experience learners ($M = 5.52$). The interaction between experience and cue type was significant, $F(1, 30) = 9.70, p = 0.004, p^2 = 0.24$. Among low-experience participants, the key information cues group ($M = 7.70, SD = 0.95$) rated intensity significantly higher than the secondary information

cues group ($M = 5.88$, $SD = 1.25$), $t(13) = 3.42$, $p = 0.005$. Within the key information cues group, low-experience participants ($M = 7.70$, $SD = 0.95$) rated intensity significantly higher than the high-experience group ($M = 5.14$, $SD = 1.22$), $t(11) = 4.66$, $p = 0.001$.

[Figure 5: see original paper] Experiment 2 poetry emotion question scores

[Figure 6: see original paper] Experiment 2 subjective ratings of poetry emotional intensity

3.6 Discussion

For low-experience learners, the main effect of cue type was significant, with those in the key information cues condition perceiving stronger poetic emotions. However, high-experience learners showed no significant differences in perceived emotional intensity across different cue conditions. Key information cues influenced only the intensity of emotional perception for low-experience learners.

4 General Discussion

Chinese classical poetry has a long and profound history, containing implicit yet abundant emotions. How readers process emotional information in ancient poetry and what factors influence this processing are worthwhile research questions. However, current research on ancient poetry emotional processing is minimal. This study represents the first attempt to investigate the characteristics and influencing factors of emotional processing in ancient poetry. Integrating findings from both experiments, Experiment 1 explored factors affecting readers' emotional processing of ancient poetry, specifically how emotional cue information within ancient poetry texts that readers attend to and process, along with annotation information outside the poetry texts, influence the accuracy and intensity of emotional understanding. Experiment 1 found that when key information cues were presented, readers were attentionally guided by key emotional information, answered questions more based on these cues, and perceived stronger poetic emotions. When annotations were presented, key information cues facilitated ancient poetry emotional processing while secondary information cues hindered it, supporting Hypothesis 1. Building on Experiment 1, Experiment 2 further examined how learner experience level influences emotional learning from ancient poetry. Results showed that when key information cues were presented to low-experience learners, they perceived stronger poetic emotions. When key information cues were presented, low-experience learners perceived poetic emotions more strongly than high-experience learners. Thus, key information cues influenced only the intensity of emotional perception for low-experience learners. This study is the first to discover the effects of cues and experience on emotional learning from ancient poetry, providing an empirical foundation for theoretical construction of ancient poetry emotional processing.

This study has several limitations that future research should address. First,

the experimental materials were limited to a single lyric poem using contrast technique. Lyrical discourse represents a special structure distinct from ordinary discourse and narrative systems. In creating expressive discourse, creators employ different lyrical acts or actions to dominate and organize lyrical discourse, forming a series of lyrical methods that make lyrical discourse a highly creative and complex system. Common rhetorical devices in lyric poetry include metaphor and symbolism, inversion and ambiguity, exaggeration and contrast, metonymy and allusion, among others. Based on different internal characteristics of lyricism, lyric poetry can be classified as ode, elegy, love poem, satirical poem, pastoral poem, landscape poem, etc. (Tong, 2004). Therefore, future research should further investigate emotional processing mechanisms in ancient poetry with different lyrical techniques and emotional types. Second, the current findings are based solely on behavioral research; future studies could employ cognitive neuroscience techniques to uncover the neural mechanisms underlying ancient poetry emotional processing. Third, emotional processing is a complex process, and ancient poetry emotional processing is even more so. This study only superficially addressed the characteristics and influencing factors of ancient poetry emotional processing. However, how many stages does ancient poetry emotional processing involve? What is the relationship between ancient poetry emotional processing and cognitive or aesthetic processing of ancient poetry? How does ancient poetry emotional processing differ from emotional processing of general texts? These are all questions worthy of future investigation.

5 Conclusion

This study draws the following conclusions: (1) When key information cues are presented to learners, they are attentionally guided by these cues, answer questions more based on them, and perceive stronger poetic emotions. (2) When annotations are presented to readers, key information cues facilitate ancient poetry emotional processing, while secondary emotional information cues hinder it. (3) Key information cues influence only the intensity of emotional perception of ancient poetry for low-experience learners.

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