

Empowering Players as Story Creators: A Character-Centric Interactive Fiction Generation System^{*}

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Abstract

Interactive storytelling shifts from passive consumption to active co-creation, empowering users to shape narratives dynamically. This paper introduces a character-centric story generation framework that incorporates VIA (Values in Action) and the Big Five personality model to enhance narrative coherence, immersion, and creativity. Designed for non-expert users, the system generates branching narratives by leveraging language models to tailor story progression based on user choices. A prototype implementation and pilot study validate the approach, demonstrating that character-centric branching significantly enhances narrative depth and engagement. Future work will focus on parameter optimization and refining prompt engineering techniques to further improve interactive novel generation.

Keywords

Story Generation, Interactive Storytelling, Authoring Tool, Large Language Models

1. Introduction

With the advancement of Large Language Models (LLMs), text generation capabilities have significantly improved. However, in story generation—particularly for long-form narratives—maintaining narrative consistency remains a challenge[1]. To address this issue, various methods have been proposed to integrate key storytelling elements, such as characters[2] and events[3], to enhance narrative coherence.

Modern storytelling extends beyond traditional narrative techniques, blending information and emotion to create immersive experiences. Interactive storytelling allows narratives to evolve dynamically based on user choices, transforming users from passive consumers into co-creators of stories[4]. This paper focuses on supporting non-expert users who wish to write stories, enabling them to actively co-create interactive narratives through character personality-driven branching.

We propose a character-centric interactive storytelling system that dynamically generates narrative branches based on predefined character personality traits, allowing users to create stories within an interactive story framework. To enhance psychological depth and narrative coherence, we integrate the Values in Action (VIA) strength model[5], commonly used in positive psychology, with the Big Five personality traits model[6], which describes individuals based on five interdependent factors.

As an early-stage study, this paper introduces a prototype and validates the feasibility of the proposed approach. All prompt templates used in this study — for interactive story generation across different experimental conditions and for narrative evaluation — are available in our GitHub repository: <https://github.com/szzyn/Empowering-Players-as-Story-Creators-A-Character-Centric-Interactive-Fiction-Generation-System>

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2. Related Work

2.1. Character-Centric Story Generation with Character Personality Traits

There are distinct differences between LLM-based story generation ensures structural coherence and grammatical accuracy, yet it has been criticized for lacking emotional depth and creativity compared to human authors[7]. To address this, previous studies have attempted to explicitly model character beliefs to enhance narrative consistency and reader engagement[2].

Additionally, research has explored psychological theories such as Maslow’s hierarchy of needs and Plutchik’s wheel of emotions to dynamically represent character emotional arcs[8]. However, these approaches have primarily focused on emotional transitions while neglecting higher-order cognitive factors such as character values and beliefs. Similarly, dialogue generation studies have applied the Big Five personality model to quantitatively reflect character personality traits. Yet, these approaches fail to account for deeper psychological factors, such as character motivation and value systems[9].

Our system is distinguished from previous works by systematically integrating character personality traits (Big Five and VIA) in a structured manner, enabling LLMs to dynamically generate psychologically rich and realistic character-driven branching narratives. By doing so, we aim to enhance narrative coherence and emotional depth in interactive storytelling.

2.2. Human-LLM Collaboration for Story Generation

Human-LLM collaboration in story generation can be categorized into three main approaches.

First, LLM-assisted writing tools support human authors in generating ideas and structuring narratives. While this approach benefits novice writers, the Wordcraft system[10] has been criticized for its repetitive sentence suggestions, which limit creative expression. Additionally, when AI-generated options are unnatural or contextually irrelevant, users struggle to find meaningful choices, reducing the effectiveness of LLM-assisted creative writing[11]. To address this issue, we align LLM-generated narrative choices with predefined character personalities to ensure that suggestions are more contextually appropriate and narratively meaningful.

Second, LLMs can generate an entire story, which is then revised by human writers. This method enhances the quality of writing, but if the LLM-generated content fails to align with the user’s intended storyline, significant cognitive effort and revision time are required[12]. To mitigate this issue, we propose a system where LLM-generated narratives are structured according to predefined character personalities, ensuring that the generated story aligns with the user’s narrative intent. This approach reduces the editing burden and improves the efficiency of human-LLM collaboration.

Third, collaborative story generation, where humans and LLM take turns contributing to the narrative, allows for creative and dynamic storytelling. However, research has shown that if role definitions are unclear, the coherence of the story may deteriorate[13]. To resolve this, we propose a method where LLM does not dictate the storyline, but rather guides narrative branching based on user-selected character personality traits. This ensures clear role differentiation between AI and human authors, maintaining narrative consistency.

This paper introduces a collaborative generation method based on character personality-driven narrative branching, aiming to enhance the quality of LLM-generated stories while improving user engagement.

2.3. Interactive Story Generation

Interactive storytelling research aims to create dynamic narratives that evolve in real time based on user choices. Traditional approaches can be categorized into two types: human user-driven systems, which adapt narratives based on direct user input, and LLM-assisted storytelling, which generates content based on predefined authorial intent. Balancing narrative control and user flexibility, however, remains a major challenge, as rigid structures limit creativity[10], while unconstrained AI-generated content often lacks coherence[13].

LLM-generated storytelling frequently deviates from intended narratives, requiring extensive human intervention and revision, which reduces efficiency in human-LLM collaboration[12]. While dialogue-based interactive storytelling enhances immersion, it often struggles to capture emotional depth, leading to repetitive or static character interactions[14]. Existing author-driven approaches such as SceneCraft[15] improve alignment with creator intent but lack adaptability in handling nuanced emotional storytelling.

To address these limitations, we propose a character personality-based decision-making mechanism that enhances both narrative coherence and the user’s creative flexibility. By integrating character personality traits into branching logic, this approach ensures consistency while allowing for dynamic and emotionally engaging storytelling.

3. Methodology

We aim to enhance narrative coherence and user engagement in LLM-based interactive storytelling by incorporating character modeling based on VIA and the Big Five personality traits. In our framework, users collaborate with the system to co-create a story, actively personalizing the narrative by selecting character personality traits in the following order.

First, users can either manually input a logline or generate one automatically using a language model. The logline establishes the core conflict and narrative direction, maintaining structural coherence while allowing creative flexibility. Using the logline as a foundation, the system constructs a structured narrative, ensuring that the protagonist’s personality traits meaningfully shape the story’s development.

Second, users directly select the protagonist’s personality traits, aligning their role with the input logline. The selection process consists of two steps. First, users choose three traits from the 23 VIA character strengths, which are grouped into six core virtues[5]:

- Wisdom and Knowledge: Creativity, curiosity, judgment, love of learning, perspective
- Courage: Bravery, persistence, honesty, zest
- Humanity: Love, kindness, social intelligence
- Justice: Teamwork, fairness, leadership
- Temperance: Forgiveness, humility, prudence, self-regulation
- Transcendence: Appreciation of beauty and excellence, gratitude, hope, humor, spirituality

Next, users adjust the levels of the Big Five personality traits consisting of five dimensions – Openness (to experience), Conscientiousness, Extraversion, Agreeableness, and Neuroticism[6] – using a Likert scale. A score of 1 represents the lowest level of the trait, 5 represents the highest, and 3 indicates a neutral stance.

After selecting the character’s personality traits, the system utilizes a language model to generate a story along with possible next choices (i.e., branches) based on the given logline and selected traits. The generated story and branches are presented to the user, who selects one of the options to advance the narrative. As the user’s choices are reflected, the system dynamically generates the next story segment and new choices in real time.

To prevent uncontrolled expansion, the number of branches per decision point is limited to five, ensuring computational feasibility while maintaining narrative diversity. Since branches are generated in real-time based on user choices, predicting the overall size of the story tree in advance is challenging. Therefore, we prioritize narrative consistency and emotional engagement at the individual branch level rather than optimizing the entire tree structure.

To maintain narrative consistency, prompt engineering techniques are employed to provide the language model with essential context, including the logline, selected character personality traits, and previous user choices. This enables real-time interaction between the language model and the system. The model generates new branches that reflect these elements, ensuring that the character’s personality remains consistent throughout the narrative. All the prompts and implementation details used in this paper can be found in the GitHub repository.

Select Character's Personality Traits

Character's Strengths

Select 3 items

Creativity

Curiosity

Judgment

Perspective

Bravery

Perseverance

Honesty

Zest

Love

Kindness

Social intelligence

Teamwork

Forgiveness

Humility

Fairness

Leadership

View more

Character's Personality

Choose a score between 1 and 5

Very Low1Neutral3Very High5

Openness to experience

Conscientiousness

Extraversion

Agreeableness

Neuroticism

Selected Character Traits

Character's Strengths

Creativity

Curiosity

Leadership

Character's Personality

Openness to experience5

Conscientiousness4

Extraversion2

Agreeableness5

Neuroticism3

Start Story

Figure 1: Prototype Screen for Selecting Character Personality Traits

Figure 1 presents a section of the proposed prototype, illustrating the character personality selection interface. In the upper left section, users can select character strengths based on VIA personality traits. In the lower left section, users can adjust personality attributes using a Likert scale based on the Big Five factors. The selected character personality traits are displayed in real-time on the right. Once the selection is complete, users can proceed to start the story and choose a branch.

4. Pilot Study

4.1. Research Questions and Study Design

We conducted a small-scale pilot study to analyze the impact of character personality traits on narrative generation, specifically assessing their effects on narrative consistency, creativity, coherence, and engagement. To achieve this, we formulated two research questions:

1. Do the generated story branches consistently reflect the predefined personality traits?
2. How does personality-based branching compare to automatically generated stories in terms of narrative quality (consistency, creativity, engagement, etc.)?

To address these research questions, we designed a study using the following two interactive entries, based on the logline of Little Red Riding Hood — *"A girl sets out to visit her grandmother, ventures through the forest, encounters a wolf, and overcomes a crisis with courage and wit."*

- **Entry 1:** Story branches were generated based only on the logline, without incorporating character personality traits.

- **Entry 2:** Character personality traits, with three VIA traits, were incorporated into the story branching process.

A volunteer university student participated in the study, selecting VIA traits and setting the Big Five personality trait values. The participant interacted with the system over seven turns, selecting one option from five choices at each turn. For Entry 2 test, the participant selected Creativity, Curiosity, and Leadership as the three VIA traits. The Big Five personality traits were set as follows: Openness: 5, Conscientiousness: 4, Extraversion: 2, Agreeableness: 5, Neuroticism: 3 (See Figure 1).

Additionally, to establish a baseline, we generated a non-interactive, linear story as Entry 3:

- **Entry 3:** A complete linear (i.e., non-branching) story was generated solely based on the logline, without incorporating character personality traits.

Since only one participant made branching choices in Entries 1 and 2, the generalization of the results is limited. However, the primary goal of this study was to explore conceptual validity and validate the experimental methodology, providing preliminary insights. We leave a broader range of personality trait combinations with more participants for future work to enhance the reliability of the findings.

4.2. Results

We conduct human evaluation and LLM-based scoring to assess the quality of story branches and overall narratives. The evaluation criteria include narrative coherence, creativity, engagement, alignment with predefined personality traits, and logline appropriateness. The evaluation focused on three key aspects:

1. **Assessing Branch’s Consistency and Appropriateness:** Determining whether the branches generated in Entry 2 appropriately reflect the predefined personality traits.
2. **Comparing Branching Methods:** Evaluating the differences between character trait-based branching and randomly generated branches by comparing the outputs of Entry 1 and Entry 2.
3. **Comparing Narrative Generation Approaches:** Analyzing the quality of stories generated through three different methods — trait-based branch generation, automatic branch generation, and fully automatic generation—using the results from Entry 1, Entry 2, and Entry 3.

For human evaluation, seven undergraduate students majoring in computer science participated as evaluators. They rated the narratives using a Likert scale from 1 to 5 and provided brief justifications for their scores. The final score was determined by averaging the ratings from all evaluators. For automatic evaluation to complement human assessment, we used GPT-4o, Claude-3.5 Sonnet, and LLaMA-3 8B. These models rated the narratives using the same 1-5 Likert scale as human evaluators. The average of the scores given by these models was used as the final LLM evaluation score, which was then compared with human evaluation results.

First, Table 1 shows how well the generated branches reflected the predefined character personality traits. Two assessment criteria were applied: (1) Consistency: Measures whether the character’s actions and dialogues align with the assigned traits. (2) Appropriateness: Evaluates whether the dialogues and actions within the branches are relevant to the assigned traits. The values represent the average scores with standard deviation inside parentheses.

The evaluation results show that human evaluators rated Consistency (average score = 4.57) higher than Appropriateness (average score = 4.42). In contrast, the LLM evaluation scored Appropriateness

Table 1

Evaluation of the Consistency and Appropriateness of Personality Trait Alignment in Branches

Evaluation	Consistency	Appropriateness
Human Evaluation	4.57(.535)	4.42(.619)
LLM-Based Evaluation	4.66(.577)	5.00(0)

Table 2

Evaluation of LLM-Generated and Selected Personality-Trait-Based Branches

Criteria	Coherence	Creativity	Engagement	Appropriateness of Actions & Dialogues
	Human/LLM	Human/LLM	Human/LLM	Human/LLM
Entry 1	3.71(.488) /4.33(.577)	3.14(.690) /3.67(.577)	3.86(.756) /3.33(.577)	3.71(.756) /4.33(.577)
Entry 2	4.14(.476) /4.33(.577)	4.00(.667) /4.33(.577)	4.14(.690) /4.67(.577)	4.43(.535) /4.33(.577)

(average score = 5.00) much higher than Consistency (average score = 4.66), indicating that the model viewed the branches as appropriately aligned with character personality traits.

Next, Table 2 compares automatically generated branches based on logline only (Entry 1) with those incorporating predefined personality traits (Entry 2). As shown in Table 2, Entry 2 (i.e., personality-based branches) scored higher across all criteria in both human evaluations and LLM-based scoring, particularly in creativity (4.00 vs. 3.14 for human evaluators; 4.33 vs 3.67 for LLM scoring) and engagement (4.14 vs. 3.86 for human evaluators; 4.67 vs 3.33 for LLM scoring).

Human evaluators found character personality traits-based branches (Entry 2) more immersive and contextually natural, though LLM-based evaluation showed smaller differences. One human evaluator noted that a generated branch accurately reflected Curiosity, while the language model identified Conscientiousness, maintaining trait consistency. Overall, these results highlight that incorporating character personality traits can enhance coherence and user engagement in interactive storytelling.

The results indicate that character traits-based branching (Entry 2) consistently received the highest ratings across all criteria except for logline appropriateness. In contrast, basic branching (Entry 1) and direct generation (Entry 3) achieved the highest scores in logline appropriateness, suggesting that reduced branching constraints may enhance alignment with the original logline. Additionally, human evaluators noted that Entry 2 exhibited higher engagement and creativity, contributing to imaginative expansion. This suggests that incorporating character personality traits into branching is effective in generating more creative narratives.

Finally, Table 3 compares three different versions of a single complete story, each generated using a different method: (1) An interactive story with logline-based branches, where a human participant selects the branches; (2) An interactive story with personality trait-based branches, where a human participant selects the branches; (3) A non-interactive story based only on the logline. The generated stories were assessed on coherence, creativity, engagement, interest, and logline appropriateness using both human evaluators and LLM-based scoring, employing a 1-5 Likert scale. As shown in Table 3, the character personality traits-based branching story (Entry 2) consistently received the highest ratings across all criteria except logline appropriateness.

Entry 1 and Entry 3 received the highest scores for logline appropriateness, suggesting that fewer branching constraints improve alignment with the original logline. However, Entry 2 excelled in engagement and creativity, indicating that incorporating character personality traits enhances narrative immersion and story quality.

These findings highlight the trade-off between narrative expansion and logline fidelity. While structured branching improves creativity and coherence, reducing constraints ensures stronger adherence to the logline. Notably, LLM-based evaluations aligned with human assessments, reinforcing the validity of automated evaluation in measuring qualitative differences across branching strategies. Overall, the experimental results show that character personality traits-based branching effectively enhances story quality.

Table 3
Evaluation of Story Performance Based on the Same Logline

Criteria	Coherence	Creativity	Engagement	Interest	Appropriateness of logline
	Human/LLM	Human/LLM	Human/LLM	Human/LLM	Human/LLM
Entry 1	3.71(.756) /4.67(.577)	3.00(.816) /4.33(.577)	3.86(.690) /4.67(.577)	4.00(.816) /4.33(.577)	/4.43(.535) /4.33(.577)
Entry 2	4.14(.378) /4.67(.577)	4.29(.756) /4.33(.577)	4.29(.756) /4.67(.577)	4.14(.900) /4.67(.577)	4.29(.488) /4.33(.577)
Entry 3	3.57(.535) /4.33(.577)	2.71(.756) /3.67(.577)	3.14(.690) /4.33(.577)	2.86(.690) /4.00(0)	4.43(.535) /4.67(.577)

5. Conclusion and Future work

This paper introduces our preliminary framework for generating interactive story branches that reflect character personality traits using VIA and the Big Five models. The pilot study results show that our approach can enhance narrative coherence, emotional immersion, and creativity in branching-based interactive storytelling. A prototype and pilot study demonstrated that incorporating character personality traits improves engagement and narrative depth.

However, several limitations remain. The small participant pool limits generalization of the results, requiring larger-scale studies. While our method improves branching coherence, it does not fully address combinatorial explosion, necessitating further optimization. Future work will expand participant diversity, refine prompt engineering, and integrate visual storytelling components.

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Declaration on Generative AI

During the preparation of this work, the authors utilized GPT-4 and Perplexity.ai for grammar and spelling checks. After using these tools, the authors reviewed and edited the content as needed and take full responsibility for the publication’s content.

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