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A Study on the Relationship among Optimistic Attitude, Humor Styles, and Creativity of School Children

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Abstract

Schoolchildren are the future drivers of national progress and development. In Taiwan, their contribution is essential to enhancing Taiwan's competitiveness and charting its future growth. Accordingly, schoolchildren-related research topics must be studied. Education authorities have also recognized the effects of school education on long-term national development and, consequently, acknowledged the necessity of identifying relevant problems in advance and formulating response measures for addressing these problems. The main research method tried to use literature review. This study examined several research variables and conducted a literature review to explore the optimistic attitude, humor styles, and creativity of schoolchildren.

Keywords

Optimistic Attitude, Humor Styles, Creativity, School Children

1. Introduction (The Research Problem and Objective)

The Nihon Keizai Shimbun of Japan and the Hitotsubashi University Institute of Innovation Research surveyed the innovation performance of major enterprises worldwide and ranked Facebook, Amazon, Alphabet, and Apple as the four most innovative enterprises. A trait shared by these four companies is their emphasis on creativity. Companies without creativity lose their competitiveness, and countries without creativity struggle to adapt to future changes. The English historian Arnold Joseph Toynbee stated that without creativity, nations and societies cannot cope with future changes or adapt to the changes brought about by a new

generation. Creativity is a key that opens the doorway to the future, and countries worldwide have been emphasizing the necessity of fostering creativity in their people.

In response to the global trend of creativity cultivation, numerous scholars have eagerly explored strategies for improving human creativity and identified various relevant factors. A literature review revealed that numerous studies have examined the creativity of various organizations, including enterprises, schools, and profit and nonprofit organizations. These studies have identified the personal traits, motivations, attitudes, and abilities of individuals as well as their interactions with their surrounding environments as key factors affecting creativity (Hunter et al., 2007; Simonton, 2009; Runco, 2007; Zhou & Oldham, 2001). Amabile (1988) and Oldham and Cummings (1996) have asserted that personality traits affect the development of creativity, and this assertion has prompted scholars to further research the factors affecting creativity. Positive thinking, the effects of which is increasingly being advocated in the field of psychology, has stimulated further attention and provided new research directions to verify or support its associating effects. Martin E.P. Seligman, a pioneer of positive psychology in the United States, stated in his book Authentic Happiness that psychology studies have typically focused on researching psychological and mental disorders but neglected the topics of happiness and finding meaning in life. Furthermore, early psychological researches have mostly examined signs of pressure, diligence, proactiveness, emotional intelligence, anxiety, and negative emotions. With the emergence and rapid development of positive psychology, scholars have begun to explore topics related to positive personality traits and produced major findings and research evidence. In response to the current research trend in the field of psychology, we aimed to integrate the main research orientations and focuses of recent scholars and investigate topics relevant to optimistic attitude, humor styles, and creativity to obtained valuable findings and identify directions for future research.

In 1988, Seligman theorized that optimism leads to success and explored various approaches for living a happy, successful, and meaningful life. He regarded optimism as a positive and proactive attitude, and he asserted that optimistic individuals are more likely than non-optimistic individuals to achieve success. Seligman further argued that optimism facilitates the cultivation of creativity and that a proactive attitude helps individuals to engage in creative thinking. In addition, humor is a positive personality trait. In a prayer for his son, General Douglas MacArthur of the United States once stated, "And after all these things are his, give him, I pray, enough of a sense of humor, so that he may always be serious, yet never take himself too seriously."

A search of the EBSCO host database revealed that approximately 100 studies on optimism were published in major journals between 2001 and 2022. A search of the ProQuest Digital Dissertations database revealed that 3298 dissertations with titles related to optimism were published during the same period. These findings indicate that optimism has been extensively discussed among scholars

worldwide in the past two decades. However, in Taiwan, few studies and dissertations have explored optimism-related topics. When the key words "creativity" and "optimism" were used to search the National Digital Library of Theses and Dissertations in Taiwan, China, the numbers of relevant articles identified were 1291 and 198, respectively; by contrast, only four articles that simultaneously discussed creativity and optimism were identified from the database. These studies all examined students as the research target, and only a small number of them examined elementary school students. Therefore, the present study further reviewed the literature that focused on optimistic attitude and creativity. In addition, given that few studies have simultaneously explored the optimistic attitude, humor styles, and creativity of schoolchildren, this topic was another research focus of the present study. We aimed to generate referential findings and suggestions that can help education authorities and future scholars to evaluate and promote creativity in schoolchildren.

2. Literature Review

This study examined several research variables and conducted a literature review to explore the optimistic attitude, humor styles, and creativity of schoolchildren.

2.1. Humor

1) Definition of humor

The Oxford English Dictionary defines humor as behavior or text that is funny, entertaining, and whimsical and elicits interest or a sense of happiness. The Encyclopedia of the New Age defines humor as anything that is funny and whimsical, and the Encyclopaedia Britannica describes humor as anything that causes people to laugh. These definitions suggest that Western culture tends to define humor in a generalized and broad manner and to perceive humor to encompass everything that is funny. The Cihai, which is a dictionary and encyclopedia of Standard Mandarin Chinese, defines humor as the use of stylistic devices, including allusions, allegories, and puns, to describe inappropriate or irrational mundane matters in a friendly manner. The latest Chinese dictionary published by Taiwan's Ministry of Education defines humor as smart and implicit rhetoric that brings a smile to listeners.

Humor refers to the sensitivity of individuals toward amusing phenomena in everyday life, and it is associated with the ability to skillfully defuse conflicts in interpersonal relationships. Humor intrigues and causes people to smile without evoking a sense of displeasure. Humor can be traced to the broad and multifaceted concept proposed by Sigmund Freud from the psychological perspective (Nazareth, 1988). However, a standard and universally-agreed definition of humor has yet to be established in the field of psychology. From a psychological perspective, humor includes cognitive, emotional, behavioral, physiological, and social factors (Martin, 2001; Nazareth, 1988), and it is regarded as a multifaceted trait. As a positive psychological trait, humor denotes an approach for perceiving

life or the world. The core concept of humor incorporates ease, wittiness, exultation, and enjoyment. Among various behavioral aspects, smiling is the most common explicit behavior associated with humor (Martin, 2001; Veatch, 1998). Among emotional aspects, feelings of exultation and enjoyment are most prominently elicited by humor (Ruch, 1993). Among cognitive aspects, the perceptions of incongruity, contradiction, and absurdity are also denoted by humor (Forabosco, 1992). Among social aspects, maintaining harmonious interpersonal relationships is a key role of humor (McGhee, 1980). On the basis of the aforementioned definitions of humor, the humor styles explored in the present study were defined as the unique tendency and habitual behavior of individuals to use humorous expressions.

2) Research on concepts and theories of humor styles

Studies on humor styles can broadly be divided into those focusing on superiority theories related to traditional Greek philosophy, the incongruity theory popularized in the 18th century, the arousal theory, and the social theory proposed by Bergson in the 20th century.

a) Superiority theories

Superiority theories are also called degradation theories. Billig (2005) regarded them as the earliest theories that challenge the definition of optimism in contemporary positive psychology. These theories argue that individuals smile when they experience a sense of superiority and control after comparing themselves with others. From a psychological perspective, it empowers individuals with greater self-esteem and inner strength. Although these theories can effectively explain the motives of aggressive and sarcastic humor, they are limited by their inability to explain how other types of humor are formed.

b) Incongruity theory

The concept of incongruity originated from the work An Essay Concerning Human Understanding, which was published by John Locke in 1690. This concept provides the basis for interpretation and compares the association between humor and intelligence, postulating that resourceful and creative individuals with strong imagination can quickly identify the connection between contradicting imageries and make funny remarks. Subsequently, Koestler (1964) expanded on the incongruity theory and asserted that a bidirectional association is created when apparently inconsistent or contradicting ideas and reference frameworks are connected through internalized concepts that are harmonious. Lefcourt (2001) asserted that having a sense of humor is related to the ability to convert ideas through cognitive or intellectual frameworks. Accordingly, humor arises from new ideas generated from the cognitive rearrangement of information, and all matters that are incongruent and unexpected can make people smile.

3) Arousal theory

Berlyne (1972) proposed the arousal theory and adopted a physiological and emotional perspective to explain the physiological arousal associated with laughing behavior. He noted that novel and strange stimuli draw the attention of individ-

uals and induce physiological reactions. Therefore, objects that are novel, contradictory, and surprising cause physiological arousal that attracts the attention of observers, prompting them to associate such objects with specific ideas.

4) Social theory

Henri Bergson was a French philosopher and a recipient of the Nobel Prize in Literature. In 1900, he proposed a differing viewpoint regarding humor on the basis of social analysis, proposing that humans find stereotypical matters to be humorous. According to Bergson, humor is a casual, indirect, and ambiguous approach employed by social members who cannot live in solitude and must therefore adapt to the environment of their social group. In a social group, individuals may also fear being ridiculed by others, and this motivates the use of laughter as a disciplinary tool. In summary, Bergson explored humor from the perspective of social functioning instead of individual psychology. Humor plays a necessary role in social frameworks by enabling smooth interpersonal relationships, promoting communication, and enhancing physical and mental health. In addition, humor is crucial to ensuring compliance with social norms and the identification of social groups.

Overall, scholars from various eras have proposed various viewpoints and theories regarding humor. In their attempts to explain humor, they have adopted differing perspectives, including emotional motivation, cognition and understanding, and physiological arousal. From a social perspective, humor elicits a sense of happiness and helps people maintain interpersonal interactions.

5) Measurement of humor styles

The following two instruments are commonly used to evaluate humor styles:

a) Humorous Behavior Q-Sort Deck (HBQD)

The Humorous Behavior Q-Sort Deck (HBQD) was developed by Craik, Martin, and Nelson (1996), who used it to survey the humorous behavior of 456 college students. The collected data were then examined through principal component analysis to identify five humor styles, namely socially warm versus cool humor, reflective versus boorish humor, competent versus inept humor, earthly versus restrained humor, and benign versus mean-spirited humor. Subsequently, Kirsh and Kuiper (2003) used the HBQD to survey 166 participants and identified three humor styles, namely socially skilled and adept humor, bawdy humor, and belabored humor.

b) Humor Styles Questionnaire (HSQ)

On the basis of the concept of humor styles, Martin et al. (2003) adopted two dimensions, namely self-enhancing versus self-defeating humor and affiliative versus aggressive humor, to identify four (2×2) humor styles and develop the Humor Styles Questionnaire (HSQ). Self-enhancing humor refers to the tendency of individuals to use humor to enhance or improve their emotional mechanisms. Affiliative humor refers to the use of humor and wit to improve interpersonal relationships. Self-defeating humor refers to the tendency of individuals to please others by ridiculing themselves. Aggressive humor refers to the use of humor by individuals to enhance themselves by mocking others.

Conventional tools for measuring sense of humor have mostly focused on the cognitive, sociopsychological, psychological, physiological, laughing-tendency, and personality-related dimensions (Martin, 2007). The HSQ developed by Martin et al. (2003) originally contained 32 forward and reverse items that were rated on a 7-point Likert scale. The instrument comprises four dimensions, namely the affiliative humor style, self-enhancing humor style, aggressive humor style, and self-defeating humor style. Specifically, affiliative humor is used to establish favorable interpersonal relationships; self-enhancing humor is used to sustain an optimistic attitude while facing life problems; aggressive humor is used to ridicule or criticize others; and self-defeating humor is used to mock or belittle oneself. Martin (2007) verified the reliability and validity of the HSQ by surveying a group of college students. The current version of the HSQ comprises 25 items covering four dimensions of humor (i.e., namely affiliative, self-enhancing, aggressive, and self-defeating humor). A high questionnaire score indicates a strong orientation toward a specific style of humor.

2.2. Optimism

1) Definition of optimism

Optimism is a proactive, positive attitude. Seligman theorized the association between optimism and success and asserted that optimistic individuals are likely to succeed. He further noted that optimism is conducive to the development of creativity in individuals and that positive emotions lead to creative thinking. In 1988, Seligman established the field of positive psychology, which aims to explore approaches to living a happy, successful, and meaningful life. According to the Oxford English Dictionary (Crowther, 1995), optimism is defined as the tendency to expect favorable outcomes and demonstrate a confident attitude when taking actions to pursue success. The Cihai defines optimism as the tendency of an individual to remain hopeful when engaging in a task. Scholars have attempted to describe optimism from various viewpoints. On the basis of the self-consciousness theory, Scheier and Carver (1985) defined optimism in terms of generalized outcome expectancies. Nevertheless, other scholars have proposed different definitions of optimism based on different perspectives. Several scholars have adopted outcome expectancies as the basis for explaining optimism, asserting that optimism refers to the expectations of individuals with respect to their overall life and life events. Other scholars have argued that optimism is an explanatory style or the act of explaining the positive events experienced by oneself (Seligman, 1991). In addition, some scholars have adopted the generalized perspective of self-efficacy and defined optimism as the ability to cope with an external environment on the basis of a high level of self-confidence (Bandura, 1988; Schwarzer, 1994). Other viewpoints of optimism include the perception of optimistic behavior as cognitive bias or a positive illusion that helps individuals to distance themselves from reality. Specifically, optimistic individuals mildly distort their self-cognition and perception of life to cope with their life pressure and challenges in a psychologically healthy manner (Taylor & Brown, 1994).

Optimism is a proactive attitude and a fairly persistent personality trait. Optimistic individuals have positive expectations of the future and look forward to positive outcomes. Overall, optimism refers to a general anticipation that the future holds more positive outcomes and that negative consequences will be minimized. In the present study, we reviewed various perspectives of optimism (proposed by various scholar) and defined the optimistic trait as a persistent, proactive personality trait characterized by positive thinking and attitude.

2) Research on concepts and theories of optimism

Theories related to optimism are mainly established through the explanatory style proposed by Seligman in 1984; the concept of dispositional optimism defined by Scheier and Carver in 1985; the hope theory proposed by Snyder et al. (1997); and the self-efficacy theory proposed by Bandura (1989).

a) Theory of explanatory style

The theory of explanatory style originated from the reformulated learned helplessness theory, which describes the habitual behaviors of individuals for explaining the negative events that they experience. These behaviors can be further divided into the optimistic and pessimistic explanatory styles. However, Bunce and Peterson (1997) argued that the reformulated learned helplessness theory does not theoretically contribute to describing how individuals explain positive life events. Most empirical studies have focused on explaining negative events and overlooked the potential effect of positive events. Therefore, we asserted that limitations pertaining to specific scenarios prevent the theory of explanatory style from fully explaining optimism.

b) Theory of dispositional optimism

The theory of dispositional optimism proposed by Scheier and Carver stresses the association between outcome expectancies and task value. When a task value is high, optimism is goal-oriented, and individuals tend to work toward desired goals and avoid undesired goals.

c) Self-efficacy theory

Bandura (1989) proposed the self-efficacy theory, which is based on expectancy viewpoints. This theory stresses the belief of individuals in their capacity to accomplish specific tasks. Subsequently, Bandura (1989) established two dimensions for the self-efficacy theory, namely efficacy beliefs and outcome expectation. Self-efficacy specifically refers to the expectancy of individuals in only their ability to achieve a specific behavioral goal; it does not refer to individual expectations regarding a behavioral outcome (Bandura, 1996). Therefore, although optimism and self-efficacy both explain the goal-oriented behaviors of individuals from the perspective of expectancy, the concept of expectancy in the context of optimism is broader and not limited to the self-evaluation of ability by individuals.

d) Hope theory

The hope theory proposed by Snyder (2002) comprises three cognitive elements, namely goals, agency, and pathways. Similar to the definitions of optim-

ism proposed by Seligman, the theory of dispositional optimism proposed by Scheier and Carver, as well as the self-efficacy theory, hope theory states that the cognitive ability of individuals determines their ability to achieve a successful outcome. However, hope theory emphasizes pathways and agency, which distinguishes it from other optimism-related theories.

e) Self-regulation theory

Scheier and Carver (2002) employed the expectancy-value theory as their basis for defining optimism, stating that when individuals pursue specific goals, they decide whether to undertake an action on the basis of outcome expectancy and task value. Outcome expectancy refers to the belief of individuals in their own ability to achieve a goal and their expectation of a positive outcome. When optimistic individuals encounter challenges, they tend to believe in their ability to resolve these challenges and achieve favorable outcomes. Accordingly, they engage in goal-oriented actions to achieve their goals. Extending the expectancy-value theory, Carver and Scheier (2003) developed the self-regulation theory to describe the operating process of optimism. Under the self-regulation theory, the basic unit is the discrepancy-reducing feedback loop, which incorporates various processes. First, an individual defines a set of goals, standards, and reference values. When an external stimulus is generated, the individual then processes this stimulus through an input function and compares the stimulus with their internal standards. When the behavior undertaken by the individual does not contradict their internal standards, the output function remains unchanged. By contrast, when the individual observes a discrepancy between their behavior and their internal standards, they adjust their existing behavior to ensure compliance with their internal standards, thereby leading to new behaviors and cognitive processes. This loop is repeated continually.

Overall, the aforementioned theories introduce essential concepts for defining optimism and provide valuable referential information.

3) Measurement of optimism

The Life Orientation Test developed by Scheier and Carver (1985) is commonly used to evaluate and measure optimism. As a tool that is primarily used to measure optimistic attitude, the subsequent Revised Life Orientation Test comprises six items (three forward items and three reverse items) that are rated on a 5-point Likert scale. The reverse items are coded reversely before the scores of all items are summed to determine the total score. A higher total score indicates a more optimistic attitude.

2.3. Creativity

1) Definition of creativity

Guilford (1965) posited that creativity is a type of cognitive ability and a form of divergent thinking; that is, creative ability consists of fluency, flexibility, and originality. Williams (1972) also proposed that creativity comprises four cognitive dimensions (i.e., fluency, flexibility, originality, and elaboration) and several

affective dimensions (e.g., curiosity, adventure, challenge, and imagination). Amabile (1983) regarded creativity as the outcome of reactions or tasks that are deemed creative by experts. Such outcomes are the results of interactions among domain-related skills, creativity-related skills, and work motivation. Csikszentmihalyi (1990) viewed creativity as the result of interactions among individuals, domains, and fields. Zhou and George (2001) maintained that creativity manifests when individual employees formulate novel and useful ideas and opine on the ideas. Finally, Sternberg (2003) stated that creativity involves exploration, imagination, assumption, comprehension, and invention. The crucial role of creativity is indisputable and should be examined in early childhood development, particularly in education (Williams, 2002). Simonton (1988) proposed the concept of persuasion and asserted that creativity can be divided into five dimensions, namely, social climate, personality characteristics, general theories or models (i.e., knowledge and techniques), process involved, and product variables and two characteristics (i.e., originality and usefulness). The aforementioned shows that overall, research on creativity focusing on the multifaceted characteristics of this ability has become mainstream.

2) Research on concepts and theories of creativity

Numerous studies have explored creativity, and numerous theories on creativity have been proposed. However, their focuses and orientations vary. For example, psychoanalytic theories focus on subconsciousness and super-ego, whereas behavioral theories maintain that all complex behaviors are fostered through learning and that environmental stimuli spark creativity. Other approaches include humanistic psychology, which emphasizes self-realization, and historical quantitative research, which examines historical figures who are known for their creativity and inventions to identify the common traits shared by creative individuals. Recent scholars have mostly adopted an integration orientation to examine creativity. In line with this trend, we constructed the theorical basis of the present study by exploring and integrating diverse dimensions of creativity and referencing the interaction model proposed by Gardner (1993), the facet model proposed by Amabile (1983), the triarchic theory proposed by Sternberg (1988), and the three-pronged systems model of creativity proposed by Csikszentmihalyi (1996).

a) Triarchic theory

Proposed by Sternberg in 1988, this theory posits that creativity is the result of interactions between intelligence, motivation, and cognitive styles. We hold this theory to be highly similar to the facet model proposed by Amabile (1983), which uses motivation and cognitive styles to explain creativity. The major difference between these two theories is that Sternberg included intelligence as a factor of creativity, whereas Amabile replaced this factor with domain-related skills.

b) Interaction approach

On the basis of the interaction viewpoint, Gardner (1993) proposed the creativity interaction model, stating that the creativity of individuals is influenced by their personal traits, intelligence, social support, and opportunities in their do-

main. This model stresses the crucial role of the interactions between the individual, others, and their work.

c) Three-pronged systems model of creativity

From the perspective of evolution, Csikszentmihalyi (1996) perceived creativity as a system in which selection and mutation are the main mechanisms. Creativity comprises more than a single element and results from the interactions between individuals, domains, and fields.

d) Facet model

Amabile was the first scholar to propose a comprehensive framework for creativity. This framework was the first to consider the effect of cognition, personality, motivation, and social factors on the various steps of a creative process. Amabile (1983) maintained that creativity comprises domain-related skills, creativity-related skills, and work motivation. The continuous and frequent interaction among these three elements reflects the high level of creativity of an individual. Amabile's main contribution was including motivation and social environments as factors that influence creative processes; notably, these factors had been overlooked by the scholars preceding her. Therefore, the effect of extrinsic motivation on creativity should be considered when exploring the internal creative process of an individual.

3) Measurement of creativity

The idea of creativity measurement was first brought up during a speech by Guilford in 1950, who was a former President of the American Psychological Association. Subsequently, Torrance further adopted Guilford's theory as the basis for developing the Torrance Tests of Creative Thinking, which is a systematic measurement tool. On the basis of this tool, various measurement instruments were developed. As previously stated, scholars adopt diverse viewpoints and perspectives to examine creativity; accordingly, this has led to the development of diverse measurement tools, such as the SIO Learning Abilities Test developed by Meeker in 1975; the Pennsylvania Assessment of Creative Tendency which focuses on the dimensions of attitude and interest; the California Psychology Inventory developed by Gough (1957), which focuses on the dimensions of personal trait and ability; the Adjective Check List developed by Gough and Heilbrun (1965). After compiling and reviewing the conceptual definitions and relevant theories of creativity, we discovered that the current mainstream trend is characterized by the employment of multifaceted models to describe creativity. Existing creativity measurement tools are broadly categorized into tools focusing on the dimensions of divergent thinking; attitude and interests; personality traits; biographical research; evaluations by teachers, peers, or instructors; appraisal of creative works; research by individuals with outstanding creativity; and self-reported responses regarding creative activities and achievements. Diverse methods have been used to measure creativity, and a standard method for evaluating creativity has yet to be established. Although each measurement method has its unique features, most methods involve the assessment of cognitive ability and personality traits, which are the two factors most closely associated with

creativity. In their current environments, individuals demonstrate their creativity through their personality traits. Through a series of thinking processes and integration, individuals can use their cognitive ability to achieve creative outcomes. This indicates that the key factors influencing creativity are personality traits and the cognitive dimensions of fluency, flexibility, originality, and elaboration. Therefore, divergence tests have been extensively used to measure and evaluate cognitive ability. To ensure the comprehensiveness and rigor of the measurement process implemented in the present study, we maintained that the measurement of creativity must involve the evaluation of cognitive dimensions and personal traits.

3. Correlation of Creativity Variables

Sternberg and Lubart (1995) asserted that creativity is a crucial element of individuals and societies. At educational institutions, we observed that some students learned creatively by drawing inferences from cases provided by their teachers. Moreover, some students tend to make humorous remarks to influence the classroom atmosphere, and these students with humorous traits were found to demonstrate greater fluency, flexibility, and ability to think and respond cleverly relative to students without such traits.

Numerous scholars have highlighted the close association between humor and creativity. Glover (1980) maintained that highly creative individuals can confront problems while maintaining a humorous demeanor. Martin et al. (2003) noted that humor and creativity incorporates the process of changing perspectives, prompting individuals to perceive objects from various viewpoints. Ziv (1976) examined humor as a stimulus by exposing participants to humorous stimuli before asking them to take the Torrance Tests of Creative Thinking, and they reported that their experimental group scored significantly higher for creativity relative to their control group. To summarize, scholars have proposed four types of humor styles and the following assumptions regarding the relationships between humor styles and individual creativity. The first assumption is that individuals with affective humor are open and passionate and that their creativity and humor style are positively correlated. The second is that individuals with aggressive humor are noncompliant and unwilling to compromise and that their creativity and humor style are positively correlated. The third is that individuals with self-enhancing humor tend to use humor to support and empower themselves and that their creativity and humor style are positively correlated. The final assumption is that individuals with self-defeating humor lack self-confidence and that their creativity and humor style are not correlated. However, these assumptions require further verification. Furthermore, Seligman and Csikszentmihalyi (2000) defined positive psychology as subjective experiences of humans, which help individuals to cope with challenges and feelings of frustration, prevent them from becoming depressed during difficult times, and drives them to actively discover their own strengths and identify solutions to problems.

The process of understanding humor and forming cognition sparks creativity.

The incongruent-resolution theory (Suls, 1972) and comprehension-elab- oration theory (Wyer & Collins, 1992) state that an individual employs humor when they are exposed to a stimulus that contradicts their fixed schema, causing them to become incongruent. This forces the individual to abandon their fixed schema, interpret the current situation from a new or opposing perspective, thereby enabling them to solve their problem. During the process of creating and understanding humor, the techniques adopted to cope with unexpected situations, free oneself from a dominant schema, and convert existing schemas are also essential skills for achieving creative outcomes. Because the process of creating humor or other creative works entails a clear understanding of human thinking, humor training enables individuals to identify blind spots in their thinking process and deconstruct their schema, thereby improving their creativity. Therefore, individuals can improve their creativity by fostering the ability to habitually and appropriately appreciate and use humor.

The enhancement of creativity through humor can be explained from an emotional perspective. The cognitive tuning model proposed by Morris (1989) states that individuals use emotion as an indicator for evaluating the safety of an environment. On the basis of their emotional signals, individuals adjust their bodily awareness and cognitive system. A negative emotion indicates that an individual lacks resources or that their surrounding environment is dangerous. Therefore, the individual must adopt systematic, conservative, and prudent strategies for processing incoming information. By contrast, positive emotion indicates the availability of sufficient resources and the safety of an environment. In this situation, individuals are willing to act adventurously, engage in creative activities, and form unique associations (Fiedler, 1988; Schwarz, 1990). Accordingly, the positive emotions created through humor are conducive for expressing creativity. From a motivational perspective, humor drives the intrinsic motivation of individuals to behave creatively. Ziv (1983) reported that humorous stimuli enhance creativity. Jurčová (1998) posited that individuals who are guided to view matters from a humorous perspective tend to behave creatively and formulate novel ideas. A review of literature on biographical research concerning personality traits revealed that highly creative individuals tend to use humor more frequently than do those with low levels of creativity (Glover, 1980; Goldsmith, 1984). Studies worldwide have also reported a significant and positive correlation between humor and creativity, with the reported correlation coefficient values ranging between 0.11 and 0.36 (Edgar, & Pryor, 2003; Getzels & Jackson 1962; Humke & Schaefer, 1996; Kovac, 2000). Bleedorn (1982) also asserted that humor and creativity are inseparable mental work processes.

4. Conclusion and Suggestions

1) Conclusions
a) Humor and creativity of schoolchildren are correlated.
The present study explored and verified the correlation between humor and

creativity in schoolchildren, and it revealed that humorous students tend to exhibit high levels of creativity. Martin et al. (2003) adopted two dimensions, self-enhancing versus self-defeating humor and affective versus aggressive humor, to identify four types (2×2) of humor styles; these humor styles were also observed at the education sites of the researchers of the present study. Therefore, this method for classifying humor styles can be employed to explore the relationship between humor and creativity. Therefore, we contend that the humor and creativity of schoolchildren are significantly correlated.

b) Optimistic attitude and creativity of school children are correlated.

Aspinwall et al. (1992) observed that relative to pessimistic individuals, optimistic individuals tend to have a more flexible and open mindset with respect to fostering creativity. Chang and Farrehi (2001) reported a significant correlation between optimism and creative thinking. In addition, Amabile (1988) and Luthans et al. (2007) have indicated that in a teamwork setting, team members who behave more optimistically are more likely to conceive more ideas and demonstrate creative behavior. These findings indirectly verify the positive effect of optimism on creativity. Accordingly, we contend that the optimistic attitude and creativity of schoolchildren are significantly correlated.

2) Suggestions

a) Our literature review revealed that the humor of schoolchildren is correlated with their enhancement in creativity. Therefore, the creativity of schoolchildren can be improved by increasing humor in campus or in their everyday lives. Whether this approach requires adjustments is a topic that merits further exploration by education authorities.

b) The present study identified a correlation between the optimistic attitude and creativity of schoolchildren. Various scholars have considered optimism to be an essential trait of humans, and numerous successful individuals have been reported to have an optimistic attitude. Therefore, whether courses for promoting optimism should be incorporated into elementary school curricula is also a topic that merits further exploration.

c) Although Taiwan is a small territory that lacks natural resources and is densely populated, it has the advantage of having abundant human resources. Because of the low birth rates and population aging in Taiwan, schools have become the primary institutions for cultivating future talent in Taiwan; schools play a key role in promoting socioeconomic development, and they are also responsible for fostering creativity in the public. Therefore, this study examined how the creativity of schoolchildren can be strengthened, who will be contributing to the competitiveness of Taiwan in the future. The analysis results of the present study can serve as a reference for decision makers in education authorities to formulate talent cultivation strategies.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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