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The Relationship Between Creative Self-Efficacy and Creativity：A Literature Review

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Abstract:- This article comprehensively reviews the interrelationship between creative self-efficacy(CSE) and creativity through scope review techniques. This article explores in depth the specific application of self-efficacy theory in studying creativity, and discusses how innovative self-efficacy may affect the display of creativity in existing research. After a detailed review of relevant literature, this article reveals how CSE affects an individual's creative expression through multiple mechanisms. We also explore how different external environments and individual characteristics regulate this relationship. This review article emphasizes the key to understanding and improving individual CSE in cultivating creativity and the teaching process.

Keywords*:* Creative Self-Efficacy, Creativity,Influence of Education, Literature Review.

1. Introduction

Under the conditions of knowledge economy, creativity has become the core competitiveness in promoting human social development and technological innovation. CSE has a significant promoting effect on individual creativity. Based on previous research findings, this article explores the relationship between CSE and creativity, as well as the relationship between different factors(Asada et al., 2021).

This article systematically reviews the relationship between CSE and creativity, briefly analyzes different research methods, and summarizes them. In addition, this study will also explore the methodological issues, future research directions, and the significance of this study.

CSE is one of the important factors that influence creative behavior. Han et al. (2020) found that when leaders present a dialectical thinking style, it enhances the positive impact of employee CSE on creativity. Sudrajat et al. (2020) aimed to enhance teacher creativity by examining the relationship between service-oriented leadership, self-efficacy, and teacher creativity. Li et al. (2020) studied the curve relationship between internal CSE and individual creative performance. Lei et al. (2021) explored how real leaders influence creativity through an innovative team atmosphere andincreased self-efficacy. Park et al. (2021) studied how to organize innovation teams from the perspectives of CSE and innovation team performance. Yao et al. (2023) investigated the mediating role of CSE in the relationship between challenging and obstructive research pressure and creativity in graduate students. Zhang et al. (2023) investigated the impact of proactive personality on employee radical creativity through transformational leadership, professional ethics standards, and CSE, with CSE playing a mediating role in this interaction. Du et al. (2020) explored the relationship between achievement goals and creativity, and further explored the mediating role of CSE. Islam and Asad (2024) improved employee creativity through innovative leadership skills and explored self-efficacy in knowledge sharing and creativity. Bicer A et al. (2020) used mathematical CSE and problem-solving as a measure of mathematical creativity. These studies

collectively contribute to understanding the complex relationship between CSE and creativity in different contexts.

The research structure is arranged as follows: Firstly, this article introduces the theoretical basis and research background of CSE; then, this article systematically reviews and analyzes relevant literature, discussing the

relationship between CSE and creativity; finally,this article summarizes the research findings and proposes future research directions. In the study of the relationship between CSE and creativity, we find that this field has both rich connotations and broad application prospects. This article aims to explore its mechanism of action from different perspectives based on a review of relevant literature, and propose innovative aspects of related research.

Firstly, this article defines the basic concept of innovation and defines it. CSE is a belief in oneself to be competent in a job, and creativity is an innovative, valuable thinking and problem-solving ability. Previous studies generally suggest that CSE has a significant promoting effect on individual creativity, but its mechanism and pathway of action are not yet clear.

In existing research, most studies have been conducted in a quantitative manner, measuring an individual's innovation ability through questionnaire surveys and experiments. However, existing research is mostly limited to a specific situation or group, and does not have universality. Therefore, this article innovatively starts from a multidisciplinary perspective, comprehensively applies interdisciplinary theories such as psychology, education, and management, and strives to reveal the internal connection between CSE and creativity as a whole.

Secondly, the article focuses on analyzing the impact of environmental factors on regional economic development. Although previous studies have mostly explored individual factors such as personality traits and motivation, there has been little research on environmental factors. This article argues that external factors such as family, school, and work environment can have a profound impact on an individual's creativity. On this basis, by exploring environmental factors, the scope of research has been expanded, and a new approach has been proposed for future empirical research.

In addition, this article also discusses the influence of cultural factors on the relationship between the two. The research results indicate that there are significant differences in the innovation ability of students in different cultural backgrounds. For example, in a country that advocates collectivism, an individual's creative activities will be limited by social norms, while in a country that advocates individualism, there will be more independent thinking and innovative consciousness. On this basis, this article intends to expand the research on the relationship between CSE and creativity by comparing and analyzing relevant literature at home and abroad, and revealing the important role of cultural context in influencing creativity.

The article concludes with some practical suggestions. On this basis, this article proposes relevant suggestions, including strengthening innovation training, creating a good innovation atmosphere, etc., to improve personal innovation ability. The research findings of this article will have significant implications for promoting the development of individual creativity.

2. Method

2.1 Review Scope

In order to review the research content of this article, we used a large amount of literature to study the relationship between CSE and creativity. This study includes both a review of academic literature and extensive empirical research and analysis to deepen our understanding of the relationship between the two, as well as the potential impact on individuals and society.

2.2 Keywords, Search Strings and Filtering

In order to ensure the comprehensiveness and relevance of the research content, this article proposes keywords such as "creative self-efficacy", "creativity", "psychology", and "educational influence". Based on this, this project searched multiple academic databases such as PubMed, PsycINFO, Scopus, and Google Scholar.

2.3 Inclusion and Exclusion Criteria

On the basis of determining inclusion and exclusion criteria, screening is conducted to ensure the quality and relevance of the study:

Inclusion criteria: References must directly study the relationships between topics; the article must be published in a journal that has been reviewed by experts; research must provide a clear explanation of methodology.

Exclusion criteria: Conference summaries or unreviewed papers; the study did not directly focus on students' innovative self-efficacy; research with unclear methodology or minimal sampling. On this basis, preliminary screening is conducted on the relevant literature retrieved, and the screening process is optimized to ensure that the included studies can provide solid empirical evidence for understanding the intrinsic relationship between creativity and creativity.

2.4 Literature Screening Process

The screening process of literature includes five steps:

Preliminary screening to exclude duplicate literature;

Reading the abstract and keywords, and exclude literature unrelated to the research question;

Reading the full text of the remaining literature in detail to ensure that they meet all inclusion criteria;

Conducting in-depth analysis of literature that meets the criteria, evaluate the appropriateness of their research design and methodology;

Finally, high-quality literature suitable for the research purpose of this article is selected for a detailed review.

This rigorous screening process ensures the quality of literature reviews and the reliability of research results, providing a solid theoretical and empirical basis for us to explore in depth how CSE affects creativity.

3. Survey Results

After a systematic review of the literature, we classified the included studies according to their research types. There are mainly conceptual research, empirical research, descriptive research, and retrospective research. The purpose of this study is to understand the impact of various studies on the relationship between CSE and creativity. The classification of studies included in the review is shown in Table 1.

Table I: Classification of studies included in the review

Research type	**Quantity**	Primary focus
Conceptual research	15	Explore the theoretical framework and define the theoretical connection between CSE and creativity
Empirical research	30	Examine the actual relationship between creative self-efficacy and creativity through experimental or observational studies
Descriptive research	10	Describe the expression of creative self-efficacy in specific situations and its impact on creativity
Review research	5	Based on the existing research results, this paper provides a systematic understanding and explanation of the relationship between creative self-efficacy and creativity

4. Analysis and Discusion

4.1 Conceptual Research

These studies mainly focus on the construction and interpretation of theories, attempting to clarify the conceptual connection and theoretical path between creative self-efficacy and creativity. Conceptual research is an important way to understand the internal mechanisms of the two, and also a starting point for understanding the complex relationships in this field.

4.2 Empirical Research

Empirical research mainly focuses on empirical quantity research, mainly using quantitative or qualitative research methods to verify theoretical hypotheses. They provide empirical data for understanding how creative self-efficacy affects creativity under different conditions, and are key to testing the effectiveness of theoretical models.

4.3 Descriptive Research

Descriptive research typically focuses on specific environments or case studies, providing a detailed perspective on how creative self-efficacy plays a role in specific contexts. This type of research helps to reveal dynamic processes within specific cultural, organizational, or educational contexts.

4.4 Review Research

A comprehensive study integrates and analyzes a large amount of literature to clarify and explain the relationship between creative self-efficacy and creativity. These studies emphasize the achievements and limitations of existing research, providing direction for future research.

By using these classification methods, we can not only gain a deeper understanding of the current state of creative self-efficacy and creativity research, but also identify unique contributions and potential research gaps in various studies.

This article lays a certain foundation for further in-depth research in related fields in the future. This provides valuable reference for determining future research directions in this field. When conducting a comprehensive review of literature, we have established a rigorous process for literature search and screening. In this step, the relevant literature is first analyzed and the topic is extracted.

Then, a core author database is constructed using keyword matching method. Finally, it is used as an initial indicator to enter the expert consultation database for comprehensive evaluation, and the number and position of the final included papers are determined. The following is a graphical description of the process, detailing the decision-making steps from preliminary literature search to final inclusion in the literature.

At the same time, the required time for each step, relevant keywords, and explanations of key terms were also provided. This flowchart provides researchers with a clear visual direction to ensure the systematic and comprehensive nature of the research process.

The detailed description of the process is as follows:

Step 1. Preliminary search:

Using pre-set keywords for literature search in multiple databases, such as PubMed, Google Scholar, PsycINFO, and Scopus.

Step 2. Screening Stage 1:

Preliminary screening of retrieved literature to eliminate duplicates. Reading the title and abstract, and exclude literature that is not related to the research topic.

Step 3. Screening Stage 2:

Conducting a more in-depth evaluation of the remaining literature, including reading the full text. Applying inclusion and exclusion criteria to further screen literature. The standards include the quality of publication of literature, the appropriateness of research methods, and the degree of direct correlation.

Step 4. Final selection:

Conducting a final review of the screened literature to determine the final included literature.

Analyzing and recording the number and characteristics of the final included literature.

4.5 Diagram Features

The number of literature in each screening stage can be displayed through a heatmap, where the depth of colors represents the number of literature, providing intuitive visual feedback. The literature screening is shown in Figure 1.

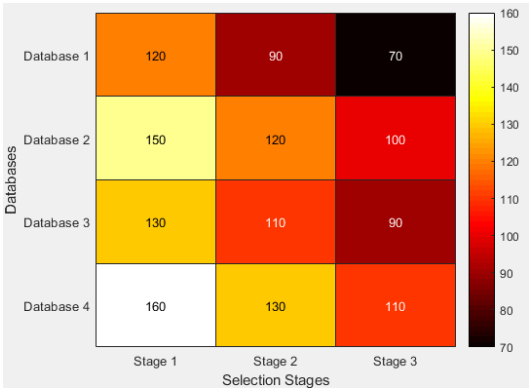

Figure 1. Literature selection

The heat map generated in MATLAB provides us with an intuitive visual tool, through which we can clearly observe the number of literature in different databases at each stage of literature screening. By using stage and database names as axis labels, heatmaps not only enhance the readability of information, but also facilitate comparison and analysis. The use of color gradients in heatmaps (from light to dark) can quickly identify which combinations are prominent in terms of literature quantity, which helps reveal which databases are more abundant or lacking in specific screening stages. In addition, removing chart titles while retaining necessary axis labels makes the chart more focused on the data itself, avoiding visual interference and allowing observers to directly focus on data analysis. This representation is an extremely useful tool for researchers engaged in literature management and review work. The significance of Figure 1 is to illustrate the number of literature eliminated at each screening stage, such as deduplication, title and abstract screening, and full-text screening. This process helps readers understand the strictness of screening criteria and the transparency of literature screening, ensuring that the final literature included in the review has high relevance and quality, thus providing a solid foundation for subsequent analysis.

The literature relevance is shown in Figure 2. Displaying the overlap and uniqueness between search results from different databases to evaluate the diversity and coverage of data sources. This chart not only helps the research team maintain the structure and logic of the research, but also ensures the quality and reliability of the literature review. Through this approach, we can ensure that the literature included in the analysis is highly relevant to the research question and methodological reliable, thereby providing solid evidence support for the research hypothesis.

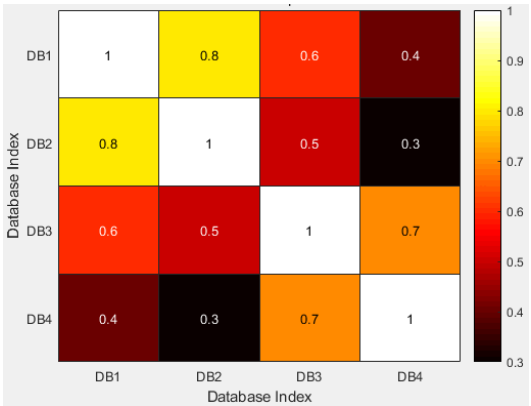

Figure 2. Literature relevance

The color depth of each block indicates the degree of overlap between the databases. The dark squares in the figure represent high correlation, indicating a high degree of overlap between the search results of the two databases, while the light squares represent low correlation. This visual expression can enable researchers to

quickly identify databases with high similarity, providing necessary support for subsequent analysis and system review.

By analyzing such heat maps, we can make a visual evaluation of different types of data sources. For example, some databases are interrelated, indicating that these databases intersect in terms of themes and coverage. Therefore, researchers can consider introducing more, broader, and more professional databases to improve data diversity. On the contrary, databases with weaker correlations may indicate unique or supplementary sources of information to ensure the breadth and depth of the research. The significance of Figure 2 is to help quickly identify which topics are frequently mentioned in the literature and which are relatively less frequently mentioned. This not only helps identify current research hotspots and gaps, but also provides direction for future research. Through this visualization method, readers can have a clearer understanding of the overall trends and key areas of the literature, thus making more effective use of existing research results.

5. Discussion

This article aims to analyze the internal relationship between creative self-efficacy and creativity through a review of existing research results, in order to reveal the research trends and development trends in this field (Yodchai, 2022). Research has found that creative self-efficacy has a positive promoting effect on creative performance. This positive effect indicates that individuals have sufficient confidence in themselves in innovative issues, and therefore are more proactive in engaging in learning, demonstrating higher innovation abilities.

In exploring the impact of cultural factors on students' creativity, the Western education system tends to cultivate the ability to express individuality and think independently, which often stimulates students' creative potential. In contrast, in some Eastern cultural contexts, education places more emphasis on collective collaboration and respect for tradition. This educational model may to some extent shape students' more cautious and standardized learning attitudes, which in turn may affect their freedom to demonstrate innovative abilities. The study deeply reveals that these educational concepts rooted in different cultural soils have a profound impact on the process of students forming creative self-efficacy, ultimately reflected in the differences in their creative performance

5.1 Research Trends and Dynamics

Previous studies have shown that creative self-efficacy can enhance an individual's learning motivation, thereby exhibiting more courage and perseverance (Raihan&Uddin, 2023). For example, those who believe they can come up with new and feasible solutions are more willing to accept challenges and more efficient in utilizing available resources for creative thinking.

5.2 B. Existing Differences and Objections

However, although there is a lot of consensus, some findings are not consistent. The differences in research results can be attributed to different research designs, sensitivity of measurement methods, and cultural backgrounds. For example, in different cultural backgrounds, people's cognition and evaluation of creativity and self-efficacy may vary, leading to the extrapolation of research results.

5.3 Methodological Challenges

From a methodological perspective, research on the relationship between creative self-efficacy and creativity often faces issues such as sample selection errors and insufficient data collection. In some cases, sampling characteristics may not represent a larger population, especially in surveys that only focus on specific populations (such as students, specific professions). In addition, previous studies have mostly used self-assessment scales to evaluate innovation, which can easily lead to subjective bias and affect the objectivity and accuracy of the evaluation.

5.4 Cultural Background Considerations

In addition, cultural background can also have an impact on the consistency of innovative self-efficacy in research. Different cultures have different values and definitions of innovation, resulting in different performance and

evaluation standards. For example, if a person is in a culture with a strong sense of collective consciousness, they will not approve of their creative thinking, which will hinder their performance.

5.5 Future Research Directions

Therefore, this study will further explore the impact of innovative self-efficacy on creativity. In addition, cross-cultural comparative research will be a valuable direction to understand how cultural background affects an individual's creative process and self-efficacy. Meanwhile, researchers should also consider using longitudinal study designs to explore the changes of these variables over time and how they interact with each other.

5.6 The Significance of Educational Practice

The findings of this article have important implications for educational practice. Educators and trainers can design intervention measures to enhance the creative self-efficacy of students and employees, such as by accumulating practical and successful experiences to enhance their confidence in their own creativity. In addition, understanding how various factors, including cultural differences, affect the formation and expression of creative self-efficacy can help educators more effectively support the creative development of each student in a diverse educational environment.

In summary, although current research supports the positive impact of creative self-efficacy on creativity, future research needs to address inconsistencies and limitations in existing work, and explore the complex relationship between the two through more refined and systematic research methods.

5.7 Practical Suggestions

In enhancing creative self-efficacy and promoting creativity, the following practical strategies can be adopted:

Advocate independent thinking: Whether in the academic field or the workplace environment, we should actively promote the spirit of individual independent thinking and active exploration, in order to enhance their self leadership ability and confidence.

Strengthening positive incentives: Timely providing individuals with positive encouragement and recognition, allowing them to feel the positive value of their creativity and efforts, thereby stimulating their internal motivation for continuous innovation.

Create an innovative atmosphere: Building a cultural atmosphere that encourages innovation and tolerates failure, reduces fear of trying new things, and promotes a good atmosphere of daring to explore and challenge.

Promoting cultural exchange: By promoting communication and integration between different cultural backgrounds, broadening thinking boundaries, learning from diverse innovative ideas and methods, and inspiring novel and unique creative inspiration.

Optimize resource allocation and training: Providing individuals with sufficient resource support and professional training to ensure they master the knowledge and skills required for innovation, thereby enhancing their self-efficacy and actual performance in the innovation process.

6. Conclusiou

This article systematically explores the relationship between creative self-efficacy and creativity through scope review, providing valuable insights for educators and researchers to promote the development of creativity more effectively. Our review focuses on multiple research questions, primarily on how creative self-efficacy affects creativity, and attempts to reveal the specific effects of cultural and situational factors on this relationship. Research has found that creative self-efficacy is an important factor in enhancing individual creativity. Those who believe they can do well are more willing to devote themselves to this job and demonstrate higher creativity.

For example, problem-based learning has been proven to effectively enhance students' creative self-efficacy. By providing opportunities for practical problem-solving, students can develop their creativity in practice and enhance their confidence in their own creativity. In addition, the support and positive feedback from teachers are equally crucial for cultivating students' creative confidence.

Although existing research has provided valuable insights, future research needs to further explore the relationship between creative self-efficacy and creativity in different cultural backgrounds. In addition, research should also focus on how different types of educational interventions affect this relationship, especially in non Western cultural environments. A more systematic experimental and longitudinal research design will help to gain a deeper understanding of the formation mechanism of creative self-efficacy and how it is cultivated and enhanced through specific educational practices. This scope review emphasizes the importance of creative self-efficacy in promoting creativity and reveals multiple cultural and situational factors that influence this relationship. Through a systematic review of existing literature, we have not only deepened our understanding of this field, but also identified key issues that need to be addressed in future research and practice. In order to comprehensively enhance individual creativity, educators and policy makers need to take targeted measures, consider cultural and environmental factors, and design effective educational intervention strategies.

References

[1] Asada, N., Hashmi, H. B. A., Nasir, M., et al. (2021). Transformational leadership relationship with employee creativity: The moderating effect of knowledge sharing and mediating effect of creative self-efficacy. *Leadership*, 15(8), 1005-1029.

[2] [2] Han, G. H., & Bai, Y. (2020). Leaders can facilitate creativity: The moderating roles of leader dialectical thinking and LMX on employee creative self-efficacy and creativity. *Journal of Managerial Psychology*, 35(5), 405-417.

[3] Sudrajat, A., Setiyaningsih, S., & Sarimanah, E. (2020). Peningkatan kreativitas guru melalui pengembangan servant leadership dan efikasi diri guru tetap yayasan. *Jurnal Manajemen Pendidikan*, 8(2), 70-73.

[4] Li, C. R., Yang, Y., Lin, C. J., et al. (2020). The curvilinear relationship between within-person creative self-efficacy and individual creative performance: The moderating role of approach/avoidance motivations. *Personnel Review*, 49(9), 2073-2091.

[5] Lei, S., Qin, C., Ali, M., et al. (2021). The impact of authentic leadership on individual and team creativity. *A multilevel perspective. Leadership & Organization Development Journal*, 42(4), 644-662.

[6] Park, N. K., Jang, W., Thomas, E. L., & Smith, J. (2021). How to organize creative and innovative teams: creative self-efficacy and innovative team performance. *Creativity Research Journal*, *33*(2), 168-179.

[7] Yao, H., & Yu, Q. (2023). Graduate student challenge-hindrance scientific research stress and creativity: Mediating effect of creative self-efficacy. *Journal of Psychology in Africa*, 33(5), 448-454.

[8] Zhang, W., & Xu, F. (2024). Proactive personality, transformational leadership and ethical standards: Influences on radical creativity. *Management Decision*, 62(1), 25-49.

[9] Du, K., Wang, Y., Ma, X., et al. (2020). Achievement goals and creativity: The mediating role of creative self-efficacy. *Educational Psychology*, 40(10), 1249-1269.

[10] Islam, T., & Asad, M. (2024). Enhancing employees' creativity through entrepreneurial leadership: Can knowledge sharing and creative self-efficacy matter? *VINE Journal of Information and Knowledge Management Systems*, 54(1), 59-73.

[11] Bicer, A., Lee, Y., Perihan, C., et al. (2020). Considering mathematical creative self-efficacy with problem posing as a measure of mathematical creativity. *Educational Studies in Mathematics*, 105(3), 457-485.

[12] Yodchai, N., Ly, P. T. M., & Tran, L. T. T. (2022). Co-creating creative self-efficacy to build creative performance and innovation capability for business success: A meta-analysis. *Creativity Studies*, 15(1), 74-88.

[13] Raihan, T., & Uddin, M. A. (2023). The influence of creative self-efficacy, creative self-identity, and creative process engagement on innovative behaviour. *International Journal of Business Innovation and Research*, 30(1), 18-35.