Environment and Social Psychology (2025) Volume 10 Issue 3 ISSN: 2424-8975 (O)
doi: 10.59429/esp.v10i3.3482 2424-7979 (P)

RESEARCH ARTICLE

A systematic literature review of student team creativity: An empirical study from 2014-2023

Ailing Tian, Jian-Hong Ye*

Faculty of Education, Beijing Normal University, Beijing, 100875, P.R. China

*** Corresponding author:** Jian-Hong Ye, jianhong.ye@bnu.edu.cn; kimpo30107@hotmail.com

ABSTRACT

In the context of creativity as an important core competence for students, it is pivotal to study students' team creativity, which explains the necessity of group context and collective work, and promotes the development of students' team achievement and task performance. Despite recognizing the value of team creativity in student development, there is a lack of coherence and consolidation in the application of the current research in this domain. The aim of this systematic review was therefore to conduct a detailed analysis of the application of team creativity for young researchers. This systematic literature review aimed to comprehensively analyze the empirical studies on students' team creativity over the past decade (2014-2023). Through a systematic search and careful screening, 10 eligible studies were identified and analyzed, and it was found that: (1) The study area was scattered; students formed teams and completed research tasks by themselves; and the research subjects were mainly undergraduates and postgraduates; (2) Research hypotheses and research questions focused on verifying the factors that affect students' team creativity and their impact on team achievement; and (3) Factors affecting students' team creativity include team communication, team cognitive style, team quick trust, and jealousy. There is a positive correlation between student team creativity and team achievement and task performance.

Keywords: empirical research; students; systematic literature review; team creativity; teamwork

1. Introduction

Creativity is defined as the ability to generate new ideas, useful concepts, or unique solutions to problems [1], and the innovation ability of university student teams is very important for national science and technology innovation [2]. Recent research has also shown that education can affect creativity by influencing an individual's semantic memory [3]. Faced with increasing competition, companies need to constantly develop new products to satisfy their customers; therefore, researchers and educators in the hospitality and some service fields have called for the development of students' creativity [4]. Currently, creativity activities and measurements related to students are receiving increasing attention and focus from researchers and practitioners [5][6].

Research related to creativity includes not only individual creativity, but also team creativity, and the study of team creativity is gradually becoming a new research trend [7]. Team creativity is the generation of

ARTICLE INFO
Received: 26 February 2025 | Accepted: 18 March 2025 | Available online: 28 March 2025

CITATION
Tian AL.Ye JH. A Systematic Literature Review of Student Team Creativity: An Empirical Study From 2014-2023. Environment and Social Psychology 2025; 10(3): 3482. doi:10.59429/esp.v10i3.3482

new and useful ideas, products, processes or services by a team [8], and is considered a team output factor [9]. Research on team creativity has focused on business and social organizations [10], as team creativity plays a crucial role for firms or organizations in a competitive environment. In general, research on team creativity in the field of business organization and management has focused on two main aspects. On the one hand, academics have focused on researching the influencing factors of team creativity, for example, individual personality traits, explicit and tacit knowledge at the individual level [11], individual emotions [12], self-efficacy and internal trust in the team [13], as well as team-level factors including the co-creation of knowledge [14], the composition of teams, and the climate of innovation within teams [15]. On the other hand, it also includes the benefits of team creativity to business organizations, such as team tasks and performance ratings [16].

Academic research on team creativity is currently limited to the level of business and social organizations. There is still a significant gap in systematically describing the topics related to team creativity in the context of student research. Given that team creativity has become an important part of innovative education in colleges and universities [17], it is not enough to simply provide research on team creativity related to business or social organizations to understand the impact of team creativity on education and research. Therefore, the relevance of this systematic literature review is that it contributes to an understanding of the influences on students' team creativity and how it can be promoted. In order to achieve this purpose, this study used a systematic literature review approach to conduct a comprehensive search and analysis of articles on team creativity-related topics with students as the subject of research. Specifically, the focus of this review was to understand the influencing factors of student group creativity and its impact on team task performance over the past 10 years (2014-2023), with the aim of providing a systematic, comprehensive, and in-depth systematic study of student group creativity research.

In summary, this study aimed to deepen scholars' understanding of creativity in student groups through a systematic literature review. In order to facilitate in-depth exploration, this review aimed to answer the following three research questions:

What are the main characteristics of empirical research on team creativity of multicultural students (research area, research scenario, research subjects)?

What are the research hypotheses or research questions of the empirical study of team creativity among multicultural students?

What are the subjective and objective influences on team creativity among multicultural students How can individual team creativity be promoted?

Through a comprehensive analysis of these research questions, the aim of this review was to offer a detailed overview of the role that student group creativity plays for both teams and team members in order to deepen our understanding of current practice, and to provide directions for future research in this field.

2. Background

Students' team creativity refers to the ability to produce novel, valuable and original ideas, products or problem-solving solutions based on cognitive interaction, behavioral collaboration and emotional engagement in a group context. Currently, research on student team creativity has received less attention from scholars [18]; research on team creativity related topics with students as the object of study is still in its infancy. In both the education and research communities, scientific justice research requires a high level of innovation and creativity, which is mainly derived from creative collaboration among research team members [19]. Some scholars have argued that an important element of everyday work in scientific research is teamwork,

especially in educational research settings [20]. Established research has primarily explored contextual factors, particularly positive, active, team-oriented variables (e.g., team trust, team cooperation, team diversity), as positive predictors of team creativity [21][22]. For example, Barczak et al. (2010) found that students generally trust their peers to be competent and trustworthy, and that positive affect among team members facilitates higher levels of creativity across the team [23].

2.1. Team communication

Team communication, which refers to the process of transferring information, exchanging opinions, and interacting emotionally between individuals in a group situation, including both verbal and nonverbal approaches, plays a crucial role in team creativity. It has been shown that the active collection and sharing of information among team members is critical to team performance [24]. Moreover, some constructive disputes and spontaneous communication among team members have a positive effect on team creativity [25]. Constructive controversy occurs when team members have different ideas or opinions, but they strive to reach a consensus by sharing their views [26]. Team communication usually refers to non-verbal (through online communication) and verbal channels between team members to share knowledge, ideas, and messages with each other [27]. This spontaneous communication mainly refers to informal, off-the-work-plan interactions between team members [28]. It is important for team members to share existing information with each other and to engage in team communication so that they can subsequently develop continuous work strategies and make informed decisions. Many studies have observed that effective exchange and collection of information is essential for high team performance [29]. In addition, compared with low-performing student teams, high-performing undergraduate and graduate teams reported higher levels of trust and listening, greater willingness to self-express, and a greater sense of ease and comfort in the work environment [30].

2.2. Team cognitive style

Team cognitive style refers to the way members perceive, organize and process information based on the team context. It consists of three main types: reflective and impulsive, verbalization and visualization, and empirical and rational [31]. It has been found that the cognitive style of a team has a direct effect on the team's creativity [32], and that there is a mediating effect of team cognition on the relationship between cognitive style and team creativity. Cognitive style is considered an important factor in the development of creative products or the exercise of creativity by teams [33]. Team cognitive styles are categorized into team experiential cognitive styles and team rational cognitive styles. The former refers to non-conformist thinking, that is, the ability to come up with different options and plans for team tasks and problem solving, and the ability to adopt a holistic perspective. In comparison, team rational cognitive styles refer to conformist thinking, which is a rather homogenous approach that the team takes to perform tasks and solve problems, and involves a rather narrow perspective [31]. The relationship between team experiential cognitive styles and team creativity has been mainly investigated in academia [34], either by introducing a team cognitive mediator or by introducing the physical environment in the workplace [35][36].

2.3. Swift team trust

Swift team trust refers to the trust in each other's abilities and goodwill established by a group in a short period of time, which can promote the openness of information and resource sharing among members. It plays a crucial role in interprofessional education [37], and it has been shown that there is a positive correlation between team trust and team creativity [38], and that trust consists of two main elements: cognitive and affective [39]. Chae (2016) suggested that cognitively-based trust can have a positive impact on online collaborative creativity [40]. Swift trust can help team members build trust in each other in a short period of time, and is particularly suitable for teams that must collaborate with time constraints. Rapid team trust

building supports the creation of a collaborative team environment, which in turn fosters creativity in the team (Berthold, 2015) [41].

2.4. Jealousy

Jealousy is an emotional experience of others' superiority (e.g., intelligence, resources, and accomplishments) that arises from team members' comparisons. It has been demonstrated that the origin of jealousy comes from individual upward social comparisons [42], and the reasons why members of a team build their self-worth through internal comparisons with each other are complex. Wheeler and Miyake (1992) stated that one of the prerequisite conditions for comparative behavior is the perception of similarity [43]. It is typical in teams for members to make comparisons with each other as they are required to share similar resources and they must compete for the same opportunities. By making comparisons with their team members, they increase their awareness of their position within the team. Higher self-worth can only be maintained by a higher relative position. Team members who are unwilling to accept that their self-worth is lower than others develop envy [44]. There are two types of jealousy, benign and malicious [45]. Individuals with benign jealousy believe in their ability to outperform the person they are jealous of [46]. In addition, previous research has demonstrated a link between positive emotions and flexibility in accessing information, which facilitates the generation of new ideas by individuals. Thus, positive benign envy enhances and encourages benign environments, which facilitates cognitive flexibility, out-of-the-box and abstract thinking; this in turn fosters the generation of new ideas. Studies have shown that there is a link between emotions such as happiness and increased investment and engagement. As self-enhancing behaviors are stimulated by benign envy, such envy is able to empower those who have the necessary cognitive and motivational resources to perform better in creative activities[47].

3. Methods

3.1. Data sources and search strategy

This study was conducted using the systematic literature review method, which is an explicit and systematic approach to conducting literature reviews that searches for and evaluates the relevant literature through well-defined search techniques and search strategies. It screens and selects the identified literature according to the research questions or to pre-defined criteria. As such, this process is able to accurately capture the current research status and development trends so as to answer the research questions [48]. This systematic literature review method is rigorous and transparent, it includes clear research questions, involves thorough crafted search strategies, sets clear literature inclusion and exclusion criteria, adopts high-quality assessment methodologies, conducts comprehensive data analysis, and ultimately yields reliable research outcomes [49].

This study followed the PRISMA guidelines [50]. A systematic search was conducted for the selected topics, and all English journal articles that met the requirements of the topic were included in this review, while other forms of research were excluded. Therefore, a comprehensive search of four well-known international databases for scientific research was conducted: the EBSCO ERIC, Elsevier Science Direct, Springer Link, and the Web of Science databases. These databases provide high quality and comprehensive articles for science and the humanities. The search string was determined through discussion with the co-author to ensure comprehensive inclusion of search terms. The three main keywords were team creativity, students, and empirical research. The search string is as follows:

("group creativity" or "team creativity") AND student AND ("empirical" or "evidence" or "data")

3.2. Eligibility criteria

In order to guarantee the accuracy and reliability of the results of the literature analysis and to accurately present the empirical research on the topic of team creativity related to students as the subject of study, based on the research questions, we developed the literature inclusion/exclusion criteria for the initial 681 articles, as shown in Table 1[50]. Criterion 1 was to qualify the research population and ensure that the research sample was foreign literature; criteria 2-6 were screening criteria commonly used in the systematic literature review method to ensure the accuracy and authority of the research sample; criterion 7 was to screen experimental empirical studies and to exclude some of the literature that uses large-scale questionnaires but lacks the research questions, experimental procedures of the study, and a clear methodology of the study; criterion 8 aimed to focus the research topic of the literature on the indicator system, influencing factors, and measurement methods of team creativity-related topics with students as the object of study, and eliminate the research literature that takes team creativity-related topics with students as the object of study as a single variable or non-research focus.

Table 1. Literature inclusion/exclusion criteria.

No.	Inclusion Criteria	Exclusion Criteria
1	English papers	Non-English papers
2	Empirical research	Non-empirical research (reviews, theory-building, etc.)
3	Quantitative research	Qualitative research (Qualitative research methods, etc.)
4	Journal paper	Book, manuscripts, conference papers, reports, etc.
5	Full text is available	Full text not available
6	Contains at least three pages	Posters, short papers or briefs of less than three pages, etc.
7	Subjects are students	Research on non-students (faculty, business employees, etc.)
8	Research includes clear research questions/methodology/conclusions	Study does not have clear research questions/methodology/conclusions
9	Research topics focusing on topics related to team creativity with students as research subjects (e.g., influencing factors, measurement methods for topics related to team creativity with students as research subjects)	Research themes on team creativity-related topics that are not student-based (e.g., team creativity-related topics that arestudent-based as a single variableor non-research focus)

3.3. Study selection

The PRISMA flow diagram (**Figure 1**) illustrates the data collection and screening procedures for the systematic review. First, all indexed studies were exported to RIS format, opened with the literature management software Zotero, and duplicates were removed. Subsequently, the remaining literature was screened for title (first screening), abstract (second screening) and full text (third screening). The eligibility of each potentially eligible study was critically assessed, and articles that did not meet the literature inclusion criteria were deleted through intensive reading until the literature inclusion criteria were met.

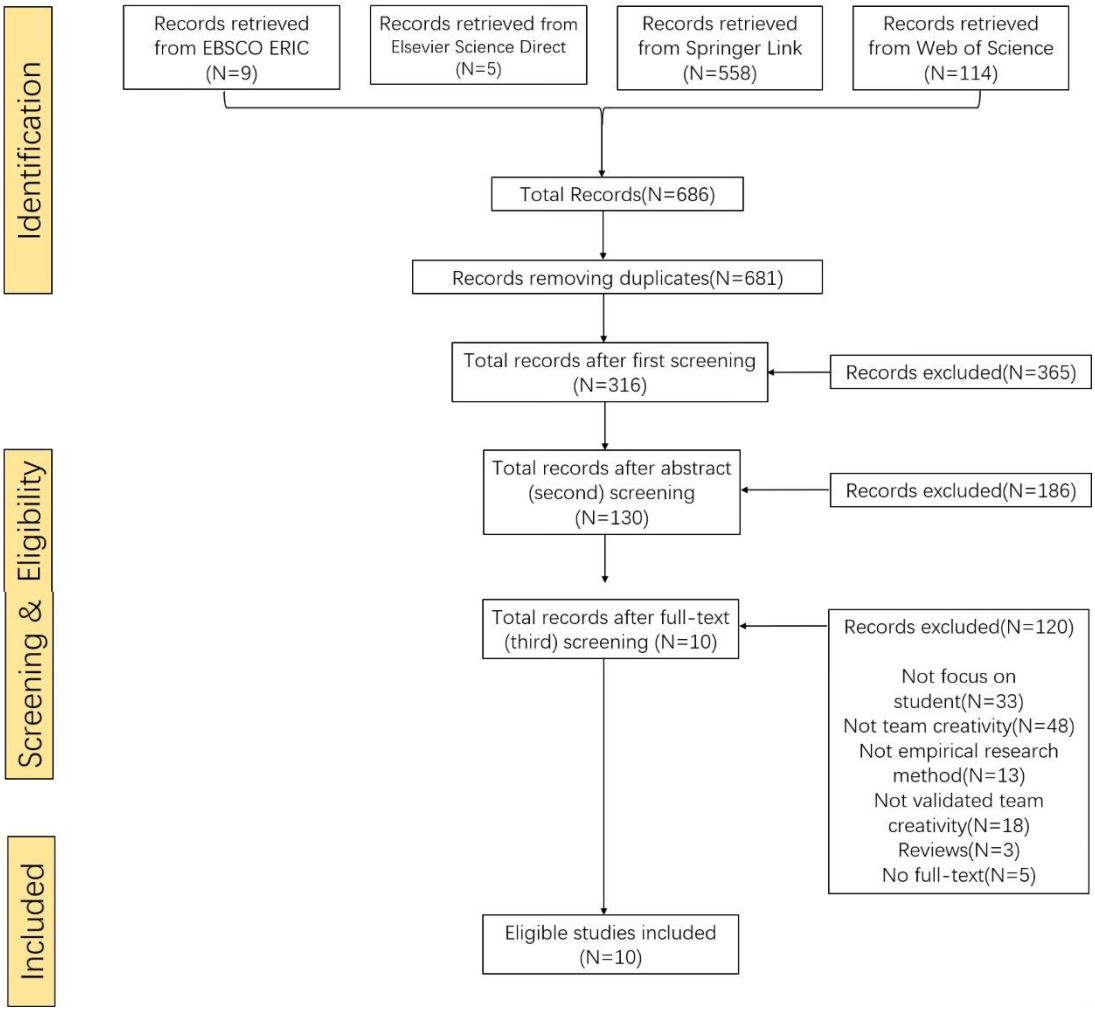

Figure 1. The PRISMA flow diagram for the systematic review.

3.4. Data extraction

The key information of the 10 articles of the final acquired literature was entered into an Excel sheet, including the research study purpose, sample, methodology, team creativity measurement scale used, other rating scales used, results of the study, and conclusions of the study. In addition, the keywords of the research for each article were recorded in the Excel sheet, including abbreviations, definitions, themes, and dimensions.

3.5. Research process and timeline

The overall process of this study was divided into four phases to ensure systematicity and rigor. In the first phase (May 1 - May 14, 2024), we focused primarily on literature searching and initial screening. The study began by identifying the topic and core keywords (e.g., “group creativity,” “student,” “empirical”) and subsequently selecting search databases (EBSCO ERIC, Science Direct, Springer Link, Web of Science), setting the timeframe of the search from 2014 to 2023, and collecting relevant literature. In the second phase (May 15-May 28, 2024), we screened the retrieved literature and organized the data. This process was based on preset inclusion and exclusion criteria (e.g., whether it was an empirical study, whether it was related to student team creativity), with initial screening through titles and abstracts, followed by in-depth screening through full-text reading, and extraction of key information such as research methodology, sample characteristics, and measurement tools. In Phase III (May 29-June 12, 2024), we conducted data analysis and

review writing. The study was synthesized around influencing factors, measurement methods, and other aspects, culminating in preliminary findings. In the fourth stage (June 13 - June 23, 2024), we focused on the refinement and finalization of the paper, including logical sorting and content adjustment, language embellishment and format standardization, as well as checking and organizing references to ensure the completeness of the paper and academic standardization.

4. Results

4.1. Characteristics of included studies

A total of 10 studies were included after a meticulous search and selection process. **Table 2** provides a concise overview of the included studies, summarizing the purpose of the study, the sample, the methodology, the Team Creativity Measurement Scale adopted, other rating scales, the results, and the conclusions. All the included studies were conducted using quantitative methods. The publication years of these studies were from 2014 to 2023.

Table 2. Summary of included studies

No.	Resear-cher	Research Purpose	Sampl-e	Methodology	Measurement	Other Measurement Questionnaires	Conclusion on TC
1	Sadia Akhtar et al. (2019) [51]	Examining the impact of transformati-onal leadership and team communicat-ion on task performance	N=273F=117 M=156	Questionnair-es and PLS	TC self-assessment scale developed by synthesizing five existing scales, 8 items , 5-point scale	Self-rating scales related to transformation-al leadership, team communication, team trust, and task performance	Team trust has a significant effect on team creativity, which in turn improves task performance
2	Fan et al. (2021) [52]	Studying team resilience improves undergraduat-e team creativity	N=201F=68 M=133	Questionnair-es and PROCESS	TC self- rating scale developed by Rego et al. 2007, eight questions	Self-rating scales related to team resilience, team creative efficacy, and team trust	Team resilience has a direct and significant impact on TC, and team resilience can play a role in team creativity through team trust
3	Bushra Mazia et al. (2022) [53]	Examining the impact of different levels of domain knowledge on team members' creative outcomes	N=33	Students design ads and have them evaluated by professionals	Creativity Assessment Scale developed by Haberlan et al. (1992), 16-item, 5- point scale	50 topics related to the profession to differentiate between the different levels of field knowledge of members	1. Creativity of teams with low domain knowledge outperforms creativity of teams with high domain knowledge; 2. Creativity of teams with unbalanced domain knowledge outperforms creativity of teams with balanced high domain knowledge
4	You J. W. (2020) [54]	The study explored how to improve team creativity by investigating the relationship between team efficacy, psychological safety, team interaction and team creativity	N=294 F=182 M=112	Questionnaire and OLS regression	7-point scale developed by Shin et al. (2007)	Self-rating scales related to team efficacy, psychological safety, and team interaction	1.Psychologic-al safety, team efficacy and team interaction are positively correlated with team creativity; 2. Team interaction is positively correlated with team creativity
5	Chu F et al. (2021) [55]	Examined whether jealousy of team members has a direct effect on TCs	N=274	Questionnair-es and PROCESS	Drawing on Zhang et al.'s (2019) questionnaires, 7 topic s	Malicious Envy Scale, 10 items; Knowledge Seeking Scale, 3 items; Moral Reflection Scale, 5 items	1.Benign jealousy is positively associated with team creativity; the opposite is true for malicious jealousy; 2. Knowledge seeking negatively mediates the relationship between malicious jealousy and TCs
6	You J. W. (2020) [56]	Examining the relationship between team goal orientation and team creativity and team achievement in a collaborative learning environment	N=589 F=352 M=237	poll	7-point scale developed by Shin et al. (2007)	Scales related to team goal orientation, team interaction, and team achievement	The importance of team interaction was emphasized from a TC perspective; team interaction enhances TC but not team achievement

No.	Resear-cher	Research Purpose	Sampl-e	Methodology	Measurement	Other Measurement Questionnaires	Conclusion on TC
7	Liu H. Y. (2022) [57]	Examining the pathway from rapid trust to creativity through collaborative interactions and exploring whether task conflict further alters the strength of indirect effects	N=629	Questionnair-es and PROCESS	Questionnaire scale developed by Farh (2010), 10 items, 5-point scale	Team Swift Trust Scale, Team Interactive Behavior Scale, Team Conflict Scale	Spontaneous communicate-on in nursing student teams is an intrinsic mechanism linking swift trust to TC, and lower task conflict plays an important role in enhancing indirect effects
8	Liu H. Y.et al. (2021) [58]	Examining potential predictors of team creativity as perceive d by nursing students collaborating in interdiscipli-nary teams	N=99	Questionnaire and stratified multiple regression analysis	Farh et al. (2010) developed Yang et al.'s (2010) adapted, 10-item, 5-point scale of team creativity for the Chinese population	Team Interaction Behavior, Team Swift Trust, Team Conflict, and Team Task Interdependen-ce Scales	Nurse educato-rs can increase TC by encouraging spontaneous communicati-on and conflict management
9	Bălău G. et al. (2019) [30]	Examining how the physical workplace environment affects the relationship between team experience cognitive style and team creativity	N=225F=103 M=122	poll	Completion of team tasks	Rational Experience Scale, Team Performance Scale	The team's experiential cognitive style of creation is more effective in terms of generating creative ideas in a neutral workplace environment
10	Liu H.Y. (2022) [59]	Examining whether conflict moderates the correlation between swift trust and creativity in student teams	N=270F=224 M=46	Questionnair-es and PROCESS	Developing new products with TC scale- s	Swift Trust Scale, Team Conflict Scale	1. Cognitive-based quick trust was directly associated with creativity; 2. Relationship conflict negatively moderated the correlation between cognitive-based quick trust and creativity

Table 2. (*Continued*)

4.2. Characteristics of the included studies

4.2.1 Characteristics of the study area

In order to show the distribution of authors of empirical studies on team creativity of foreign students, this review analyzed 10 studies with the first author as the unit of analysis and found that there were seven main first authors from mainland China (*N* = 3, 42.86%), South Korea (*N* = 1, 14.29%), Taiwan, China (*N* = 1, 14.29%), Pakistan (*N* = 1, 14.29%), and the Netherlands (*N* = 1, 14.29%). In terms of the number of authors, Chinese scholars were the main group of researchers studying students' team creativity.

4.2.2. Characterization of research scenarios

In order to understand how students' team creativity is measured, this study used the team organization form as an analytical entry point to analyze the 10 studies, and found that the team organization form, and the percentage of the study sample were as follows: individual students self- organized their teams and initiated a project plan (*N* = 5, 50%), individual students were grouped by a situational test and completed a group task (*N* = 1, 10%), individual students were randomly assigned by the system to form teams and participate in activities (*N* = 3, 30%), and individual students completed the Team Creativity Self-Rating Scale (*N* = 1, 10%)

4.2.3. Characteristics of the study population

In order to find out how students' team creativity performs at all levels and in all types of educational systems, this study analyzed the nature of the school and the different school segments of the research subjects in 10 studies. In terms of the nature of the school in which the research subjects were enrolled, there was one study in public schools and one in private schools. In terms of the school segments in which the research subjects were enrolled, there were five studies for those with bachelor's degrees, two for those with

master's degrees, and one study for a mixed sample of bachelor's and master's degrees. In addition, there were seven studies that did not mention the nature of the school in which the study subjects were enrolled, and one that did notmention the academic segment in which the study subjects were enrolled.

4.3. Research hypotheses or research questions

The research elements, research hypotheses and research questions proposed by the 10 studies are shown in **Table 3**. As seen in the research hypotheses section of the figure, (1) team creativity appears mainly as a dependent variable, which is reflected in Bushra et al.'s (2022), Bălău et al.'s (2019), and Liu's (2022) studies. (2) Team creativity has been studied not only as a dependent variable, but also as an independent variable; for example, in Fan et al.'s (2021) study, team creativity appeared as a dependent variable, and the other variables (e.g., team creativity efficacy and team trust) appeared as mediating variables (H2, H3, and H4); in Akhtar et al.'s (2019) study, team creativity sometimes appeared as a dependent variable (H4) and more often as other variables (H1, H2, H3, H5); and in You's (2020) study, team creativity appeared as an independent variable (H3) and a dependent variable (H4), respectively. (3) Team creativity appeared as a dependent variable with other mediating or moderating variables, which is reflected in You's (2020) study, where team creativity appeared as a dependent variable (H2, H3, and H4), and psychological safety appeared as a moderating variable; in Chu et al.'s (2021) study, where team creativity appeared as a dependent variable, and moral reflection was used as a mediator variable to moderate the relationship between two types of jealousy and knowledge-seeking; and in the study of Liu (2022), where team creativity appeared as the dependent variable, and a mediator variable (team interaction) and a moderator variable (task conflict) were added to explore the relationship between rapid team trust and team creativity.

Table 3. Research factors and research hypotheses.

No.	Researcher	Research Factors	Research Hypotheses
1	Akhtar S et al. (2019)	Transformational Leadership, Team Communication, Team Trust, Team Creativity	H1: Transformational leadership positively impacts team trust under conditions that validate team creativity and task performance. H2: Transformational leadership has a positive impact on team communication in the context of validating team creativity and task performance. H3: Team communication has a positive effect on team trust when measuring team creativity and task performance. H4: Team trust is positively related to team creativity. H5: Team creativity has a positive impact on task performance.
2	Fan M et al. (2021)	Team Resilience, Team Creativity Social Identity Theory, Team Creative Effectiveness, Team Trust	H1: Team resilience is positively related to team creativity. H2: Team creativity efficacy mediates between team resilience and team creativity. H3: Team trust mediates between team resilience and team creativity. H4: Team creativity efficacy and team trust mediate the sequence between team resilience and team creativity.
3	Bushra Mazia et al. (2022)	Domain knowledge of team members (high vs. low domain knowledge), Team creativity	H1: Team A (a highly domain knowledge balanced team with all members having equal and high domain knowledge) will produce greater creative outcomes than all other teams. H2: Team B (a low domain knowledge balanced team with all members having the same low domain knowledge) will produce team creative outcomes that are second only to the high domain knowledge balanced team creative outcomes and will produce higher creative outcomes than the other team creative outcomes with unbalanced domain knowledge. H3: Team C (an unbalanced team where all members have high domain knowledge but one member has less domain knowledge) will produce greater creative outcomes than Team D, but balanced domain knowledge teams (except Team A and Team B). H4: Team D (an unbalanced team in which all members have low domain knowledge but one member has high domain knowledge) will produce far fewer creative outcomes than all other teams.
4	You J. W. (2020)	Psychological safety, Team effectiveness, Team interaction, Team creativity	H1: Psychological safety exerts a moderating relationship between team effectiveness and team interaction. H2: There is a positive relationship between team interaction and team creativity. H3: Team efficacy has a direct effect on team creativity under the moderating effect of psychological safety. H4: Psychological safety as a moderating variable in the indirect effect of team effectiveness on team creativity.

No.	Researcher	Research Factors	Research Hypotheses
5	Chu F.et al. (2021)	Team creativity, Jealousy, Knowledge-seeking, Ethical reflection	H1: Benign envy is positively associated with team creativity. H2: Malicious jealousy is negatively related to team creativity. H3: Knowledge seeking positively mediates the relationship between benign envy and team creativity. H4: Knowledge seeking negatively mediates the relationship between malicious jealousy and team creativity. H5: Moral reflection mediates between benign envy and the search for knowledge. H6: Moral reflection moderates the negative relationship between malicious envy and knowledge seeking.
6	You J. W.(2020)	Team Goal Orientation, Team Creativity, Team Achievement	H1: There is a correlation between team goal orientation and team interaction. H2: There is a significant interaction between team mastery and team performance-oriented goal orientation on team interaction. H3: There is a correlation between team creativity and team achievement. H4: There is a correlation between team goal orientation and team creativity. H5: There is a significant interaction between team mastery and team performance-oriented goal orientation on team achievement.
7	Liu H. Y. (2022)	Quick Team Trust, Team Creativity, Team Interaction, Team Conflict	H1: Team interactions mediate between rapid team trust and team creativity. H2: The mediating role of team interaction between rapid team trust and team creativity is based on team conflict.
8	Liu et al. (2021)	Team Creativity, Demographic Characteristics, Individual Creativity, Team Interaction Behavior, Team Swift Trust, Team Conflict, and Team Task Dependence	H1: What is the perceived team creativity of nursing students in teams? H2: How well do nursing students perceive the correlation of factors related to team creativity in teams? H3: Is team creativity as perceived by team members different from each of the factors associated with team creativity? H4: What factors correlate highly with team creativity?
9	Bălău et al. (2019)	Team cognitive style, Workplace physical environment, Team creativity, Team performance	H1: Team experiential cognitive style has a positive effect on team creativity when experiential cues are not present in the physical environment of the workplace. H2: The effect of team experiential cognitive style on team creativity is weaker in the presence of experiential cues in the workplace physical environment than in the absence of cues. H3: The effect of team experiential cognitive style on team creativity is weaker in the presence of experiential cues in the workplace physical environment than in the absence of cues. H4: The relationship between team experiential cognitive style and team creativity will be weaker in the presence of experiential cues in the workplace physical environment than in the presence of experiential cues.
10	Liu H. Y. (2022)	Swift team trust, Team conflict, Team creativity	H1: There is a direct relationship between swift team trust and team creativity. H2: Task conflict is directly related to team creativity and team conflict is indirectly related to team creativity. H3: Team conflict has a negative correlation between team swift trust and team creativity.

Table 3. (*Continued*)

4.4. Research process and conclusions

4.4.1. Sampling

The sample of participants varied throughout the studies, including undergraduate and master's students in nursing, MBA, and science programs in the Netherlands, South Korea, Taiwan, and China. The average sample size for these studies was 289, with a range of 33-629.It is worth noting that the gender distribution was not always balanced in these studies. This may result in findings that are not applicable to multiple genders, and somewhat reduces the overall external validity of the results.

4.4.2. Purpose of the study and research methodology

Eight studies used only questionnaires in their surveys to measure students' team creativity, with the main measure being a self-rating scale for team creativity. Some of them drew on a particular scholar's self-assessment scale, while others combined several self-assessment scales to select a few topics for measurement.

The studies chose multiple scales, illustrating their diverse research purposes and methods. For example, Fan et al. (2021) utilized the Team Creativity Self-Assessment Scale developed by Rego et al. (2007) to

explore the relationship between team resilience and team creativity among undergraduate students. Bushra et al. (2022) adopted the Creativity Assessment Scale developed by Haberlan et al. (1992) to study the impact of different levels of domain knowledge on team members' creative outcomes. You (2020) adopted the questionnaire scale developed by Shin (2010) to study the relationship between team goal orientation and team creativity and team achievement in a collaborative learning environment. Liu (2022) adopted the English scale developed by Farh et al. (2010), which was adapted by Yang et al. (2010) for local conditions, to explore the relationship between rapid team trust, team interaction behaviors, team conflict, and team creativity. Sadia Akhtar et al. (2019) developed a self-assessment scale of team creativity by synthesizing the five existing scales that examined the relationship between transformational leadership and team communication on task performance.

In the remaining two studies, the research methodology was focused on different aspects. The study conducted by Bushra et al. (2022) took a third-party rating approach, in which student groups designed creative products based on a certain theme and then submitted them to an industry insider for scoring, while Bălău et al. (2019) grouped different teams of students and asked them to complete different team tasks to explore how different physical workplace environments affect the relationship between cognitive style of team experience and team creativity.

4.4.3. Discussion

This review delves into empirical research on multicultural student team creativity, drawing insights from relevant studies covering the topic between 2014 and 2023. The synthesis of these studies elucidates the main features of multicultural student team creativity research, including the field of study, research scenarios, and research subjects, and summarizes the research hypotheses or research questions in the field. In addition, this synthesis systematizes the subjective and objective factors that influence multicultural students' team creativity. This section addresses the three research questions in turn (as previously mentioned 4.1-4.3) to provide a comprehensive examination of the field. In addition, in order to promote the development of team creativity of multicultural students, this paper puts forward the following suggestions.

First of all, in the process of academic teamwork, optimizing the integration of communication and cognitive styles is crucial to enhancing research innovation. The creativity of academic teams is highly dependent on information sharing and collision of ideas among members. Academic teams can promote in-depth academic exchanges among team members by organizing regular seminars and dissertation symposiums to enhance knowledge complementarity. At the same time, universities can offer interdisciplinary courses and support diversified academic programs to encourage students to expand their mindsets and develop creative problem-solving skills in a diverse team environment.

Second, the rapid establishment of trust within a team is critical to the efficient functioning of the team. Team leaders can increase trust among team members by clarifying their roles, reaching consensus on goals, and rationalizing the division of labor, thus reducing communication costs and improving collaboration efficiency.

Third, moderate competition can also be a driving force to stimulate academic innovation. Universities can promote benign jealousy in academic teams by means of excellent research project presentations, guide team members to improve their own academic level in a mutually motivating environment, and turn competition into a positive factor that promotes the development of creativity rather than an obstacle that leads to negative competition within the team.

4.5. Research Limitations

This review makes some important contributions to the literature, but it also has some limitations. As conference proceedings and book chapters on students' team creativity research were excluded from the review, publication bias may have been introduced. Moreover, only including English-language articles in the review increases the possibility of language bias. Future research should address these limitations in order to gain a more comprehensive understanding of the issue.

5. Conclusions and implications

This review contributes to the understanding of team creativity and its related influences on young researchers in academic contexts. Research findings are drawn from 10 empirical studies that delved into topics related to student team creativity.

Regarding the first research question, Table 2 provides comprehensive insights into the research regions, research scenarios, and research subjects of the empirical study on the topic of students' team creativity. That is, the main study areas were the Netherlands, Pakistan, South Korea, and China; the most frequent research scenarios were those in which individual students form their own teams and complete the research tasks; and the study population mainly consisted of undergraduate and graduate students.

As a response to the second research question, this study drew conclusions by systematically examining the research premises, and research process of the 10 empirical papers (Table 3). That is, the research hypotheses and research questions focused on verifying the factors influencing students' team creativity, and the impact on team achievement.

In response to the third research question, this paper highlights the main factors affecting young researchers in the area of team creativity, including team communication, team cognitive style, quick team trust, and jealousy; and the positive correlation between student team creativity and team achievement and task performance.

In conclusion, this systematic review represents the first comprehensive analysis of research on team creativity among students, and provides specific insights for future research and creativity stimulation and maintenance in student groups. Team communication styles, team cognitive styles, team fast trust, and jealousy can serve as important influences on team creativity for team achievement, and task performance. By understanding these aspects, the conclusions can provide a clearer roadmap for educators and researchers in the dynamic field of student team creativity.

Data availability

Not applicable.

Author contributions

Ailing Tian: Conceptualization, Data Curation, Formal analysis, Methodology, Writing - Original Draft, Writing - Review & Editing. Jian-Hong Ye: Funding acquisition, Supervision, Validation, Writing - Review & Editing. All authors have read and agreed to the published version of the manuscript.

Funding

This work was supported by the First-Class Education Discipline Development of Beijing Normal University: Excellence Action Project (Grant Number: YLXKPY-XSDW202408).

Ethics statement

Not applicable.

Consent to participate

Not applicable.

Conflict of interest

The authors declare no conflict of interest.

References

1. Carmeli, A., & Paulus, P. B. (2014). CEO ideational facilitation leadership and team creativity: The mediating role of knowledge sharing. The Journal of Creative Behavior, 49 (1), 53-75. https://doi.org/10.1002/jocb.59
2. Zhou, E., & Xin, M. (2023). How does cognitive conflict affect research team creativity? - The chain-mediated effects of team resilience and team positivity. Science and Management, 44(2), 75-81. https://doi.org/10.3969/j.issn.1003-8256.2024.02.010
3. Lai, C. K., Haim, E., Aschauer, W., Haim, K., & Beaty, R. E. (2024). Fostering creativity in science education reshapes semantic memory. Thinking Skills and Creativity, 53, 101593–101593. https://doi.org/10.1016/j.tsc.2024.101593
4. Liu, C. H., Horng, J. S., Chou, S. F., & Huang, Y. C. (2017). Analysis of tourism and hospitality sustainability education with co-competition creativity course planning. Journal of Hospitality, Leisure, Sport and Tourism Education, 21, 88-100. https://doi.org/10.1016/j.jhlste.2017.08.008
5. Jahnke, I., Haertel, T., & Johannes, W. (2017). Teachers' conceptions of student creativity in higher education. Innovations in Education and Teaching International, 54(1), 87-95. https://doi.org/10.1080/14703297.2015.1088396
6. Kettler, T., & Bower, J. (2017). Measuring creative capacity in gifted students: comparing teacher ratings and student products. Gifted Child Quarterly, 61(4), 290-299. https://doi.org/10.1177/0016986217722617
7. Mannucci, P. V., & Yong, K. (2018). The differential impact of knowledge depth and knowledge breadth on creativity over individual careers. Academy of Management Journal, 61, 1741-1763. https://doi.org/10.5465/amj.2016.0529
8. Amabile, T. M. (1983). The social psychology of creativity: A componential conceptualization. Journal of Personality and Social Psychology, 45, 357-376. https://doi.org/10.1037/0022-3514.45.2.357
9. Li J. J., Zhang, J., & Zhang, N. (2024) How team work passion affects team creativity? An investigation of multi-level causal circle mechanism from a dynamic computational perspective. Advances in Psychological Science, 32(2), 206-227. https://doi.org/10.3724/SP.J.1042.2024.00206
10. Wang, Y., Chen, Z., Li R., & Zhou M. (2023) The man at the helm is strong, the punter is innovative? The promotion mechanism of leadership qualification excess to team creativity. Journal of Psychology, 56(3), 326-338. https://doi.org/10.3724/SP.J.1041.2024.00326
11. Zhang, W., Zhang, Q., Yu, B., & Zhao, L. (2015). Knowledge map of creativity research based on keywords network and Co-word analysis, 1992-2011. Quality & Quantity, 49(3), 1023-1038. https://doi.org/ 10.1007/s11135-014-0032-9
12. Yefet, M., & Glicksohn, J. (2020). Examining the influence of mood on the bright side and the dark side of creativity. Journal of Creative Behavior, 55(2), 337-347. https://doi.org/ 10.1002/jocb.454

13. Hendarsjah, H., Susanto, E., Lies Sugianto, B. R., & Handoko, T. H. (2019). Curvilinear relationship between intra-team trust and team innovation: The moderating role of task complexity. Journal of Asia Business Studies, 13(3), 472-487. https://doi.org/10.1108/JABS-12-2016-0180

14. Somech, A., & Drach-Zahavy, A. (2013). Translating team creativity to innovation implementation: The role of team composition and climate for innovation. Journal of Management, 39(3), 684-708. https://doi.org/ 10.1177/0149206310394187

15. Ou, Z., Chen, T., Li, F., & Tang, P. (2018). Constructive controversy and creative process engagement: The roles of positive conflict value, cognitive flexibility, and psychological safety. Journal of Applied Social Psychology, 48, 101-113. http://doi.org/ 10.1111/jasp.12494

16. Zhang, J., Zhou, L., Li, L., & Hua, W. (2023) What makes teaching good? Mechanisms of teacher's dialectical feedback on college students' team creativity. Journal of Psychology, 55(8), 1301-1316, https://doi.org/10.3724/SP.J.1041.2023.01301

17. Zacher, H., & Johnson, E. (2015). Leadership and creativity in higher education. Studies in Higher Education, 40, 1210-1225. https://doi.org/10.1080/03075079.2014.881340

18. Keller, R. T. (2006). Transformational leadership, initiating structure, and substitutes for leadership: A longitudinal study of research and development project team performance. Journal of Applied Psychology, 91(1), 202-210. https://doi.org/10.1037/0021-9010.91.1.202

19. Muller-Camen, M., & Salzgeber, S. (2005). Changes in academic work and the chair regime: The case of German business administration academics. Organization Studies, 26(2), 271-290. https://doi.org/10.1177/0170840605049802

20. Curseu, P. L. (2010). Team creativity in web site design: An empirical test of a systemic model. Creativity Research Journal, 22, 98-107. https://doi.org/10.1080/10400410903579635.

21. Grawitch, M. J., Munz, D. C., Elliott, E. K., & Mathis, A. (2003). Promoting creativity in temporary problem-solving groups: The effects of positive mood and autonomy in problem definition on idea-generating performance. Group Dynamics: Theory, Research, and Practice, 7(3), 200-213. https://doi.org/10.1037/1089-2699.7.3.200

22. Barczak, G., Lassk, F., & Mulki, J. (2010). Antecedents of team creativity: An examination of team emotional intelligence, team trust and collaborative culture. Creativity and Innovation Management, 19, 332-345. https://doi.org/10.1111/j.1467-8691.2010.00574.x

23. Olaisen, J., & Revang, O. (2017). Working smarter and greener: Collaborative knowledge sharing in virtual global project teams. International Journal of Information Management, 37(1), 1441-1448. http://doi.org/10.1016/j.ijinfomgt.2016.10.002

24. Yang, Z. R., Xie, Z. S., & Bao, G. M. (2010). The mechanism of teams' swift trust and interaction behavior on team creativity. Journal Fuzhou University (Philosophy and Social Sciences), 6, 31-34. https://doi.org/10.3969/j.issn.1002-3321.2010.06.004

25. Komara, C., & Sriyanto, W. (2018). The effectiveness of applying constructive controversy method in gaining student's critical thinking for writing argumentative essay. Getsempena English Education Journal, 5(2), 177-186. https://doi.org/10.46244/geej.v5i2.857

26. Mesmer-Magnus, J., & Dechurch, L. (2012). Information sharing and team performance: A meta-analysis. IEEE Engineering Management Review, 40(1), 119–136. https://doi.org/10.1109/emr.2012.6172774

27. Hinds, P. J., & Mortensen, M. (2005). Understanding conflict in geographically distributed teams: the moderating effects of shared identity, shared context, and spontaneous communication. Organization Science, 16(3), 290–307. https://doi.org/10.1287/orsc.1050.0122

28. Cheng, H. H., & Yang, H. L. (2014). The antecedents of collective creative efficacy for information system development teams. Journal of Engineering & Technology Management, 33, 1-17. https://doi.org/10.1016/j.jengtecman.2013.12.001

29. Hill, G. W. (1982). Group versus individual performance: Are N + 1 heads better than one? Psychological Bulletin, 91(3), 517-539. https://doi.org/10.1037/0033-2909.91.3.517

30. Bălău, G., Faems, D., & Bij, H. (2019). Team experiential cognitive style and team performance: The moderating impact of workplace setting. Creativity and Innovation Management, 28(3), 343–354. https://doi.org/10.1111/caim.12319

31. Norris, P., & Epstein, S. (2011). An experiential thinking style: Its facets and relations with objective and subjective criterion measures. Journal of Personality, 79, 1043-1079. http://doi.org/10.1111/j.1467-6494.2011.00718.x

32. Aggarwal, I., & Woolley, A. W. (2019). Team creativity, cognition, and cognitive style diversity. Management Science, 65, 1586-1599. https://doi.org/10.1287/mnsc.2017.3001

33. Epstein, S. (2003). Cognitive - experiential self - theory of personality. In T. Millon, & M. J. Lerner (Eds.), Handbook of psychology (pp. 159-184). John Wiley & Sons. https://doi.org/10.13140/RG.2.2.25295.74408

34. Maloney, M. M., Bresman, H., Zellmer-Bruhn, M. E., & Beaver, G. R. (2016). Contextualization and context theorizing in teams research: A look back and a path forward. The Academy of Management Annals, 10, 891-942. https://doi.org/10.5465/19416520.2016.1161964

35. Mitchell-McCoy, J. (2005). Linking the physical work environment to creative context. Journal of Creative Behavior, 39, 167-189. http://doi.org/10.1002/j.2162-6057.2005.tb01257.x

36. Alabdouli, S. R., Alriyami, H. M., Ahmad, S. Z., & Mertzanis, C. (2023). Interprofessional nursing education and the role of swift trust and task conflict in team creativity: the mediating role of team interactive behaviors. Journal of Health Organization and Management, 37(8), 505-525. https://doi.org/10.1108/JHOM-01-2023-0028

37. Boies, K., Fiset, J., & Gill, H. (2015). Communication and trust are key: Unlocking the relationship between leadership and team performance and creativity. The Leadership Quarterly, 26(6), 1080-1094. https://doi.org/10.1016/j.leaqua.2015.07.007

38. Robert, L. P., Dennis, A. R., & Hung, Y. T. C. (2009). Individual swift trust and knowledge-based trust in face-to-face and virtual team members. Journal of Management Information Systems, 26(2), 241-279. https://doi.org/10.2753/MIS0742-1222260210

39. Chae, S. W. (2016). Perceived proximity and trust network on creative performance in virtual collaboration environment. Procedia Computer Science, 91, 807-812. https://doi.org/10.1016/j.procs.2016.07.084

40. Berthold, J. (2015). Stimulating team creativity: The influence of swift-trust on the team creativity process. Journal of Sustainability Management, 3(1), 19-28. https://doi.org/10.19030/jsm.v3i1.9518

41. Lazarus, R. S. (1991). Progress on a cognitive-motivational-relational theory of emotion. American Psychologist, 46(8), 819-834. https://doi.org/10.1037//0003-066x.46.8.819

42. Wheeler, L., & Miyake, K. (1992). Social comparison in everyday life. Journal of Personality and Social Psychology, 62(5), 760-773. https://doi.org/10.1037/0022-3514.62.5.760

43. DelPriore, D. J., Hill, S. E., & Buss, D. M. (2012). Envy: Functional specificity and sex-differentiated design features. Personality and Individual Differences, 53(3), 317-322. https://doi.org/10.1016/j.paid.2012.03.029

44. Sterling, C. M., van de Ven, N., & Smith, R. H. (2016). The two faces of envy: Studying benign and malicious envy in the workplace. In R. H. Smith , U. Merlone, & M. K. Duffy (eds.), Envy at work and in organizations: Research, theory, and applications (pp. 57-84). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780190228057.003.0003

45. Van de Ven, N., Zeelenberg, M., & Pieters, R. (2012). Appraisal patterns of envy and related emotions. Motivation and Emotion, 36, 195-204. https://doi.org/10.1007/s11031-011-9235-8

46. Zhou H., He H. (2020). Exploring role of personal sense of power in facilitation of employee creativity: A dual mediation model based on the derivative view of self-determination theory. Psychology Research and Behavior Management, 13, 517-527. https://doi.org/10.2147/prbm.s257201

47. Rudnicka, A. R., Jarrar, Z., Wormald, R., Cook, D. G., Fletcher, A., & Owen, C. G. (2012). Age and gender variations in age-related macular degeneration prevalence in populations of European ancestry: A meta-analysis. Ophthalmology, 119(3), 571–580. https://doi.org/10.1016/j.ophtha.2011.09.027

48. Batchelor, M. T. (2005). Beautiful models: 70 years of exactly solved quantum many-body problems. Journal of Physics a Mathematical and General, 38(14), 3245–3246. https://doi.org/10.1088/0305-4470/38/14/b03

49. Page, M. J., Moher, D., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., McGuinness, L. A., … McKenzie, J. E. (2021). PRISMA 2020 explanation and elaboration: updated guidance and exemplars for reporting systematic reviews. BMJ, 372, n160. https://doi.org/10.1136/bmj.n160

50. Indriasari, T., Luxton-Reilly, A., & Denny, P. (2020). Gamification of student peer review in education: A systematic literature review. Education and Information Technologies, 25, 5205-5234. https://doi.org/10.1007/s10639-020-10228-x

51. Akhtar, S., Khan, K. U., Hassan, S., Irfan, M., & Atlas, F. (2019). Antecedents of task performance: An examination of transformation leadership, team communication, team creativity, and team trust. Journal of Public Affairs, 19(2), e1927. https://doi.org/10.1002/pa.1927

52. Fan, M., Cai, W., & Jiang, L. (2021). Can team resilience boost team creativity among undergraduate students? A sequential mediation model of team creative efficacy and team trust. Frontiers in Psychology, 12, 604692. https://doi.org/10.3389/fpsyg.2021.604692

53. Bushra, M. F., Ahmad, A., Ahmad, W., Khattak, Z. Z., Saeed, I., Han, H., & Ariza-Montes, A. (2022). Empirical investigation of the domain knowledge and team advertising creativity typology: The case of Nescafe coffee. Journal of Retailing and Consumer Services, 69, 103086. https://doi.org/10.1016/j.jretconser.2022.103086

54. You, J. W. (2020). Enhancing creativity in team project-based learning amongst science college students: The moderating role of psychological safety. Innovations in Education and Teaching International, 58(2), 135-145. https://doi.org/10.1080/14703297.2020.1711796

55. Chu, F., Zhang, W., Wu, S., & Liu, G. (2021). How does individual-level envy affect team creativity? Effects of knowledge seeking and moral reflection. SAGE Open, 11(4), 215824402110525. https://doi.org/10.1177/21582440211052554

56. You, J. W. (2021). Investigating the effects of achievement goals on team creativity and team achievement in learning communities at a South Korean university. Higher Education, 81(2), 367-383. https://doi.org/10.1007/s10734-020-00545-y

57. Liu, H. Y. (2022). Investigating the pathways between swift trust and team creativity among nursing student teams in taiwan: A moderated mediation model. BMC Nursing, 21(1), 344. https://doi.org/10.1186/s12912-022-01118-3

58. Liu, H. Y., Chen, N. H., Wang, I. T., Wu, S. M., Han, C. Y., & Hsu, D. Y., et al. Predictors of individually perceived levels of team creativity for teams of nursing students in taiwan: A cross-sectional study. Journal of Professional Nursing, 37(2), 272-280. https://doi.org/10.1016/j.profnurs.2021.01.010

59. Liu, H. Y. (2022). The moderating role of team conflict on teams of nursing students. International Journal of Environmental Research and Public Health, 19(7), 4152. https://doi.org/10.3390/ijerph19074152