OPEN ACCESS

June, 2023
ISSN: 1990-3839
DOI: 10.5897/ERR
www.academicjournals.org

ACADEMIC JOURNALS
expand your knowledge

About ERR

Educational Research and Reviews (ISSN 1990-3839) is published bi-monthly (one volume per year) by Academic Journals.

Educational Research and Reviews (ERR) is an open access journal that publishes high-quality solicited and unsolicited articles, in English, in all areas of education including education policies and management such as Educational experiences and mental health, the effect of land tenure system on resource management, Visualization skills and their incorporation into school curriculum, Gender, education and child labour etc. All articles published in ERR are peer-reviewed.

Contact Us

Editorial Office: err@academicjournals.org

Help Desk: helpdesk@academicjournals.org

Website: http://www.academicjournals.org/journal/ERR

Submit manuscript online http://ms.academicjournals.me/.

Editorial Board

Editorial Board

Table of Content

Vol. 18(6), pp. 104-113, June 2023
DOI: 10.5897/ERR2023.4318
Article Number: BB1F25B70709
ISSN: 1990-3839

http://www.academicjournals.org/ERR

ACADEMIC JOURNALS
expand your knowledge

Educational Research and Reviews

Full Length Research Paper

Principal characteristics' effect on teacher retention: A systematic review

Darron L. Shell[1]*, Carletta S. Hurt[2] and Hiraetta White[3]

[1]Department of Education, Health, and Social Work, University of the District Columbia, 4250 Connecticut Avenue NW, Bldg. 71, Washington, DC 20008, USA.
[2]Department of Architecture and Urban Sustainability, University of the District Columbia, 4250 Connecticut Avenue NW, Bldg. 71, Washington, DC 20008, USA.
[3]Department of Faculty Planning and Compliance, 8860 E. Chaparral Road, Suite 100, Scottsdale, Arizona 85250, USA.

Received 21 February, 2023; Accepted 7 April, 2023

Teacher attrition and retention are among the major problems in schools worldwide. Particularly in the United States, there is a great demand for teachers in elementary and secondary schools because of teachers transferring to new schools or resigning from the teaching profession altogether. This systematic review focuses on research on the prevalent decline of teacher retention in American elementary and secondary schools. This review aims to communicate reasons for the decrease in teacher retention and consider the impacts of teacher decline on students' academic success. Three databases – Web of Science, Science Direct, and Pro Quest – were utilized to obtain evidence to substantiate the causes and effects of the wave of teacher resignations. The evidence was analyzed to determine reliability using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) and Cochrane review guidelines. The synthesis analysis included fourteen studies. It was clear from the synthesis that support and clear communication from school principals are essential factors of teacher retention in U.S. elementary and secondary schools. Other notable elements that prevent teacher turnover include recognizing the efforts of teachers, enforcing discipline and compliance among the student population, and conducting fair teacher evaluations. To improve teacher retention rates in the United States, school principals must adopt characteristics contributing to teacher retention.

Key words: Teacher, attrition, retention rates, school principals, elementary, secondary.

INTRODUCTION

Several academic publications have pointed to the causes and effects of teacher attrition and retention. These publications document how poor academic performances of students and the high turnover rates of teachers were caused by the inability to retain high-performing teachers (Ronfeldt et al., 2013; Ingersoll and

*Corresponding author. E-mail: darron.shell@udc.edu.

May, 2012). Challenges have contributed to teacher shortages in recent years, according to media channels in England and the United States (Hazell, 2018; Garcia and Weiss, 2019). Research suggests that the shortage of teachers in elementary and secondary schools may continue to increase steadily (Sutcher et al., 2016; Foster, 2019; TES Global, 2019). Unreasonable student-to-teacher ratios within the classroom could prompt teachers to leave the profession before retirement due to an overwhelming and disproportionate number of responsibilities.

The United States has a 20% teacher attrition rate, while the United Kingdom has an estimated attrition rate of 50% (See et al., 2020). Three countries, including France, Germany, and the Netherlands, were estimated to have a low (5%) teacher attrition rate (Carlsson et al., 2019). In Israel, first-year teachers leave the profession at an average rate of 41% per year, although the percentage may reduce to 19% in the third year of employment (Israeli Central Bureau, 2019).

There is a correlation between a decrease in the number of teachers and the quality of education students receive. In the absence of certified teachers, schools employ substitutes or temporary teachers with little or no experience in the teaching profession (Ronfeldt et al., 2013). A lack of experience in the teaching field alone does not undermine the academic influence of substitute teachers. However, substitute teachers are not always accustomed to school norms and procedures since substitute teachers are not full-time employees. Furthermore, the education levels and competencies required of certified teachers are not mandatory for substitute teachers. This means a substitute teacher may not possess the knowledge needed to assist a student with understanding schoolwork. Thus, teachers who are not certified may not be capable of adding value to the education of students due to a lack of knowledge and skill sets. Yet, substitute teachers are often needed to fill the voids of certified teachers who decide to find work elsewhere or retire early. Schools with low teacher retention tend to have increased costs since additional funds are needed for teacher recruitment each time a teacher resigns (Ryan et al., 2017).

Adverse experiences of teachers who have been in the field for at least ten years may cause poor teacher retention among those teachers at elementary and secondary schools. On the other hand, teachers new to the field of education have not yet dealt with the many stressors with which veteran teachers have had to contend. Hence, teachers new to the field of education are at the forefront of teacher attrition and are likely not yet seeking to move on from their recently established careers. When there is a high attrition rate among new teachers, it is probably because the professional development in the first year of teaching is challenging (Tillman, 2005; Carmel and Badash, 2018). The motivation to teach among new educators seemingly dwindles when teachers encounter many challenges, like navigating the complex dynamics among students while communicating with parents, during their associations with their colleagues, and relating to the school principal and other leaders. Moreover, teachers new to the field of education tend to deal with anxiety because they are adjusting to the use of recently obtained theoretical knowledge (Liu and Johnson, 2006). Additional factors – school culture, work complexity, salary, incentives, and administrative attitudes toward older teachers – significantly influence a teacher's decision to stay (Gavish and Friedman, 2010; Schaefer et al., 2012).

Buchanan (2010) argues that a high workload, insufficient teacher support, and the lack of guidance largely explain why teachers, especially new ones, leave their positions.

Low teacher retention rates will likely increase in elementary and secondary schools if the factors causing the low rates are not addressed. Remote schools and schools already experiencing low teacher retention rates will suffer greatly. This projection has led to the need to mitigate ways to reduce the problem of low teacher retention. The role of the school principal is critical to developing resolutions needed to improve teacher retention rates. School principals have a significant influence on the teachers they lead. That influence, if used correctly, can lead to changes within the school that will motivate teachers to stay. A study conducted by Boyd et al. (2010) reported effective school principal leadership as the only significant factor that predicts teacher retention. In this study, researchers observed and measured the influence of principal leadership on K-12 teachers in New York City. The researchers used the following measurement criteria: school discipline policies, support from school administration, teacher evaluation process, and decision-making that includes teacher input. In another study, Allensworth et al. (2009) investigated the effects of principal leadership on K-12 Chicago teachers. Researchers in this study found a high teacher retention rate in school settings where teachers interact with school principals as instructional leaders. Likewise, high teacher retention rates were seen in schools where teachers were included in decision-making processes and in schools where teachers trusted in the abilities of the principal to lead.

Ladd (2011) analyzed a North Carolina statewide survey on teacher retention. The study revealed that teachers value the support of a principal, student discipline, high student learning outcomes and instruction, a principal they can trust, inclusiveness in decision-making, and fairness in the teacher evaluation process. These aspects impact teacher retention. The researcher found these principal leadership characteristics as the most significant predictors of teacher attrition and retention rates in middle and high schools.

The role of a principal in teacher retention, such as supervision, contributes to discipline, professional

Table 1. A PICOS Framework.

Problem/population	Intervention	Comparison	Outcome	Settings
Problem: Teacher retention/attrition/resignation Population: Teacher and principal	Varieties of principal characteristics: leadership, support, communication, fairness, management skills, professional training, trust, behavior, attitude, principal perception, etc.	Positive characteristics vs. Negative characteristics	Increase in the rate of teacher retention	U.S. elementary and secondary schools.

Source: Authors

guidance, teacher autonomy, a positive school climate and culture, and professional and collaborative relationships that encourage principal-teacher communication (Semarco and Cho, 2018; Grissom and Bartanen, 2019; Thomas et al., 2020). A high propensity for teachers to leave is often associated with negative perceptions of school principals. Poor support from the principal accounts for almost half of the teachers quitting. This claim was demonstrated by Kraft et al. (2016), who revealed principals' positivity and effective leadership as significant predictors of teacher retention. Multiple studies from different national contexts have also claimed a strong relationship between the characteristics of principals and whether teachers remain at the school.

Undoubtedly, evidence drawn from research findings has shown that several characteristics of the school principal are strongly associated with teacher retention and its correlated outcomes. However, despite primary studies indicating these associations, few studies have comprehensively reviewed all principal characteristics affiliated with teacher retention. Therefore, this systematic review aims to evaluate primary studies to reveal factors that predict teacher retention.

METHOD

Guidelines for this review follow preferred reporting items for systematic review and meta-analysis (PRISMA) statement (Page et al., 2021). Using the PRISMA framework, articles were obtained using eligibility criteria. The research process is in stages: (1) protocol development, (2) development of eligibility criteria that guides the inclusion and exclusion of studies, (3) database search for relevant studies, (4) title, abstract, and full-text screening based on inclusion criteria, (5) assessment of the studies for quality using an appraisal checklist, (6) data extraction and synthesis, and (7) reporting the findings of the synthesis.

Protocol development

Protocol development is the first stage of the systematic review process, which identifies the research questions following a specified framework. This review used the population/problem, intervention, comparison, outcome, and settings (PICOS) framework to develop the research questions based on the objective and what is obtainable (Table 1).

Following the framework below, a PICOS question was formulated: What characteristics of principals predict teacher retention in elementary and secondary schools in the U.S.?

Eligibility criteria

The eligibility criteria identify criterium for including and excluding studies in this current systematic review to enhance the quality and reliability of the study.

Inclusion criteria

- Only primary or empirical studies are considered in this study, and no limitation to the publication years
- The study must contain primary data, and the non-restriction to publication years is to produce a comprehensive understanding of this phenomenon and reduce publication bias
- Studies that obtain data primarily from the principals and teachers of elementary or secondary schools
- Studies that investigate the role of principals in teacher retention or attrition
- Studies with a measurable outcome of teacher retention
- Only English studies are selected to avoid the shortcoming of non-English peer-reviewed studies.
- Studies that consider teacher retention as the willingness of teachers to stay within their current school or profession
- Studies within the context of the USA

Exclusion criteria

- Non-primary and non-empirical studies
- Studies examining other interventions beyond the characteristics of principals
- Studies not looking at teacher retention as an outcome
- Non - English articles
- Studies without a measurable outcome of teacher retention
- Studies not within the context of elementary or secondary school
- Studies not within the context of the USA

Search strategy

This study utilizes the query of three primary electronic databases – Web of Science (WOS), Science Direct, and ProQuest – to retrieve relevant articles. Inclusion criteria widened the scope of the article searches. The three databases were searched using simple and general search strings. The search strings used for the database searches were principal, teacher retention, and teacher attrition.

Article screening and selection

Following the database search, the retrieved studies were screened

Table 2. Risk of bias assessment questions.

S/N	Criteria
QA1	Was the research design appropriately congruent with the proposed objective?
QA2	Does the study describe the study subject and setting?
QA3	Was a large sample size considered?
QA4	Was the data collected from a reliable source?
QA5	Was the outcome measured reliably?

Source: Authors

based on the defined inclusion criteria using the PRISMA screening protocol.

Risk of bias assessment

The quality and the potential bias of information used in this systematic review were assessed. The assessment determined the quality and reliability of the findings presented in this study. Establishing the validity of the results will lead to revamping educational policies and new procedures. The evidence was assessed using five (5) risk bias assessment questions as criteria developed by the author to support the objectives of this research. One objective is to avoid presenting non-reliable information (Table 2). The first risk bias assessment question in the research design – *Was the research design appropriately congruent with the proposed objective?* - evolved from information available in the studies gathered for this review. The second question – *Does the study describe the study subjects and setting?* – refers to the location and environment of the school, as well as the demographical data of the principals and teachers. Thirdly, the sample size is evaluated for sufficiency – *Was a large sample considered?*

The fourth question investigates the reliability of the data – *Was the data collected from a reliable source?* Finally, the method in which the outcome was measured is examined – *Was the outcome measured reliably?* The criteria were rated on a 0-3 scale per checklist. The overall rating for the five questions was 15. A score of 12 or greater signified that the quality of evidence was high. Evidence was moderately high if the assessment score was between 8-11 and low if there was a score for quality below 8.

Data extraction

A synthesis form was designed to match the research objective. The synthesis was used to extract meaningful information from the included studies. The information included author details, publication year, research design, study settings, school settings, principal associated factors (intervention), and outcomes.

RESULT SYNTHESIS

Article selection process

A search of three electronic databases returned a total of 558 references, which were exported in a CSV (comma-separated values) format to Microsoft Excel, where citations were managed. The sources were sorted and filtered to exclude 231 references that were duplicates. The remaining 327 citations were screened and evaluated. In this process, 299 non-eligible articles were excluded, mainly because they were not within the scope of the research on which this systematic review is based. The full text of 27 eligible resources was reviewed to evaluate the data for each study – research objectives, methodologies, findings, and conclusions. Following the full-text screening, only 12 studies met the inclusion criteria for this review. However, 12 of the studies were excluded because the studies were not conducted within the context of the U.S., did not incorporate a non-principal associated intervention, and did not relay a clear outcome (Figure 1).

Quality assessment

The 14 eligible studies were assessed for quality using the five risks of bias assessment questions. The 14 studies were considered high quality, with each scoring an overall 13. The studies utilized designs appropriate for the proposed research objectives of this systematic review. The subject and setting in the 14 studies were clearly described. Of the 14 studies, 9 utilized a large sample size to examine the impact of school principals' characteristics on teachers' retention.

The studies by Boyd et al. (2010), Brown and Whynn (2009), Easley (2006, 2008) and Youngs (2007) used small to medium samples. Outcomes documented in the 14 studies were reliably measured in clear terms. The summary of the assessment of each study is shown in Table 3.

Characteristics of included studies

In total, 14 primary studies were reviewed to determine how principal characteristics affect teacher retention rates in the U.S. The studies were published over nine years, spanning from 1998 to 2018. The years with the most publications eligible for this review were 2007 and 2018; each with three studies (Figure 2). The 14 studies were published in 11 journals. The American Educational Research Journal, Leadership and Policy in School Journal, and the Journal of Educational Administration each published two studies for a total of 6 analyzed for

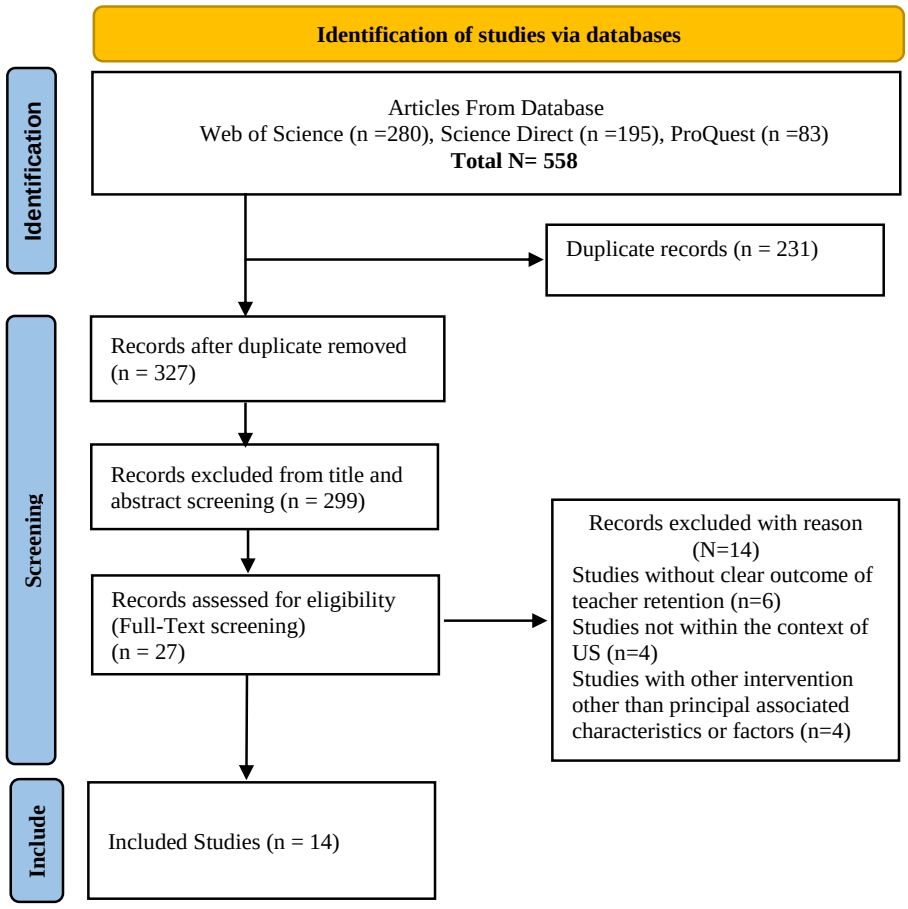

Figure 1. Article selection process following PRISMA guidelines.
Source: Authors

Table 3. Quality assessment rating.

Reference	Q1	Q2	Q3	Q4	Q5	Over-all Score	Remark
Boyd et al., 2010	3	3	1	3	3	13	High quality
Brown and Whynn, 2009	3	3	1	3	3	13	High quality
Easley, 2006	3	3	1	3	3	13	High quality
Easley, 2008	3	3	1	3	3	13	High quality
Gersten et al., 2001	3	3	3	3	3	15	High quality
Grissom et al., 2017	3	3	3	3	1	13	High quality
Hancock and Scherff, 2010	3	3	3	3	3	15	High quality
Player et al., 2017	3	3	3	3	3	15	High quality
Dahlkamp et al., 2017	3	3	3	3	3	15	High quality
Singh and Billingsley, 1998	3	3	3	3	3	15	High quality
Olsen and Huang, 2018	3	3	3	3	3	15	High quality
Urick, 2016	3	3	3	3	3	15	High quality
Wynn et al., 2007	3	3	3	3	3	15	High quality
Youngs, 2007	3	3	1	3	3	13	High quality

Source: Authors

this systematic review. In contrast, the remaining eight journals published one eligible article yearly (Figure 3). The surveys in each study were either conducted during the execution of the studies or retrospectively,

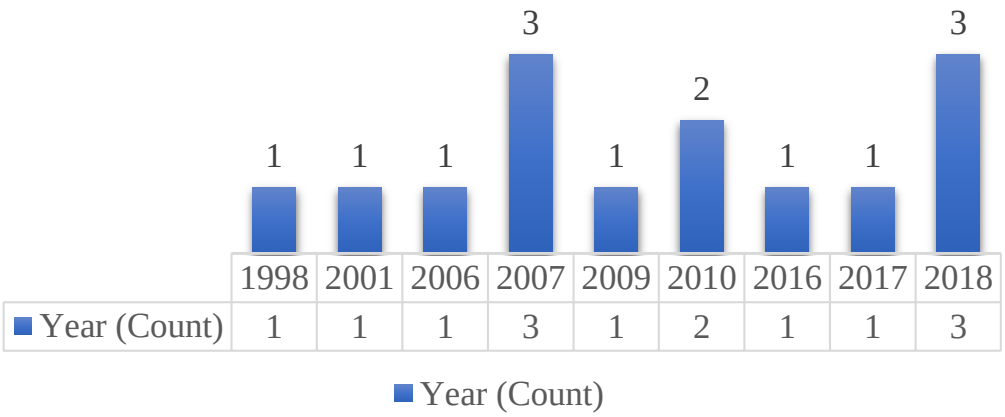

Figure 2. Article distribution by publication year.
Source: Authors

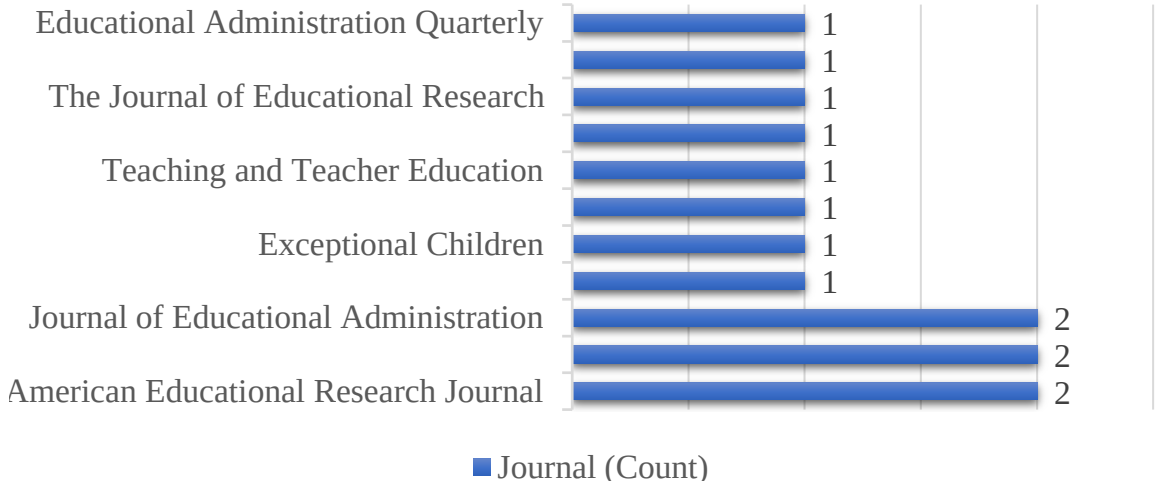

Figure 3. Article distribution by Journal.
Source: Authors

using information from national surveys conducted in various rural and urban school districts. Retrospective survey data were mainly obtained from the Schools and Staffing Survey (SASS), Teacher Follow-Up Survey (TFS), and National Center for Educational Statistics (NCES). A retrospective survey approach enabled researchers to obtain a large sample size as they combined data from readily available national surveys. Study subjects were either teachers or principals, or both in some cases, of elementary, middle, or high schools. A different method of analysis was used in each study to explore the relationship between the independent variable (principal associated characteristics) and the dependent variable (teacher retention). The synthesis analysis revealed multiple principal characteristics that predict whether a teacher intends to stay at the school, leave for employment at another school or district, or completely abandon the teaching profession. About 23 principal characteristics were extracted from the studies. Of these 23 characteristics, eight were reported by two authors. The eight characteristics are principal support and encouragement, clear communication, teacher recognition for a job well-done, principal-enforced disciplinary policies, support for teachers, and fair performance evaluations. Other notable characteristics include adequate allocation of resources, protection from external pressure, principal professional commitments, growth, and learning (Table 4).

Each study reported that characteristics of elementary, middle, high, and special population school principals were shown to have positive effects on the intentions of the teacher to remain in their current teaching roles. Notably, Dahlkamp et al. (2017) was the only researcher who reported principal self-efficacy, which was shown as

Table 4. Principal associated characteristics predicting teachers' intention to stay or leave.

S/N	Principal Characteristics	Reference
1	Support and encouragement	Boyd et al., 2010; Brown and Whynn, 2009; Easley, 2006; Gersten et al., 2001; Hancock and Scherff, 2010; Player et al., 2017; Singh and Billingsley, 1998; Olsen and Huang, 2018; Urick, 2016; Wynn et al., 2007
2	Clear communication	Player et al., 2017; Singh and Billingsley, 1998; Olsen and Huang, 2018; Urick, 2016; Wynn et al., 2007
3	Teacher recognition for a job well done	Player et al., 2017; Singh and Billingsley, 1998; Olsen and Huang, 2018; Urick, 2016
4	Enforced disciplinary policy and support for teachers	Boyd et al., 2010; Player et al., 2017; Olsen and Huang, 2018; Urick, 2016
5	Fair performance evaluation	Boyd et al., 2010; Singh and Billingsley, 1998; Youngs, 2007
6	Adequate resources allocation	Boyd et al., 2010; Wynn et al., 2007
7	Protection external pressure	Boyd et al., 2010; Youngs, 2007
8	Principal professional commitment, learning, and growth	Brown and Whynn, 2009; Grissom et al., 2019
9	Decision inclusiveness	Boyd et al., 2010
10	Respect for teachers	Easley, 2008
11	Good teacher-principal relationship	Easley, 2008
12	Principal focus on important issues	Easley, 2008
13	Instructional leadership	Grissom et al., 2019
14	Principal helps	Singh and Billingsley, 1998
15	Principal talks	Singh and Billingsley, 1998
16	Regular feedback	Wynn et al., 2007
17	Reduced responsibilities	Wynn et al., 2007
18	Principal's professional background	Youngs, 2007
19	Boarder district and bureaucratic dysfunction	Easley, 2006
20	Inadequate resources	Gersten et al., 2001
21	Lack of relevant information	Gersten et al., 2001
22	Limited decision-making power	Gersten et al., 2001
23	Principal self-efficacy	Dahlkamp et al., 2017

Source: Authors

having a minor impact on the decision of a teacher to stay at a school. Other characteristics – such as border district and bureaucratic dysfunction, inadequate resource provision, lack of relevant information, and limited decision-making power – were reported to affect whether a teacher decides to leave a school directly. The summary of the synthesis analysis is presented in Table 4.

DISCUSSION

The characteristics of U.S. school principals, predictors of U.S. teacher retention, have never been systematically reviewed. This review of studies provides an understanding of how principal characteristics/behaviors/attitudes in schools project teacher retention. This review focuses on how school principals play a vital role in teacher management. Without considering other variables, the characteristics exhibited by the principals are important modifiers and predictors of the devotion of teachers to their present jobs and the teaching profession. Principal support and encouragement had the most influence on teacher retention rates. Principals who support and encourage their teachers tend to receive teacher loyalty, which causes high teacher retention rates.

The effect of support and encouragement on teacher retention was confirmed in the synthesis analysis, with approximately 72% of the studies claiming principal support and encouragement as significant predictors of teacher retention (Boyd et al., 2010; Brown and Whynn, 2009; Easley, 2006, Gersten et al., 2001; Hancock and Scherff, 2010; Player et al., 2017; Singh and Billingsley, 1998; Olsen and Huang, 2018; Urick, 2016; Wynn et al., 2007).

Regardless of the school location (rural or urban) and the school type (elementary, middle, high, special), the characteristic of principal support remains a significant predictor of U.S. teacher retention and attrition. This

finding is like the conclusions made in several other studies published in the context of other countries. A good example is the study conducted by Gomba (2015) in Zimbabwe. The study confirmed that the commitment and support of a principal for novice and experienced teachers are determining factors in the decision of a teacher to remain in the profession. The findings are unsurprising, as several scholars have indicated that principals are vital stakeholders in teacher retention issues (Boyd et al., 2010).

Teachers who experience professional and career-based support from the school principal tend to remain in the school with no plans of leaving the profession. Principals who provide professional and career-based support encourage teachers by listening to concerns, offering viable resolutions, and granting professional development opportunities. These responses from school principals inspire and promote perseverance, determination, and a sense of belonging to an organization where leaders care for the employees. A multi-level LCA (life-cycle assessment) of 35,560 teachers from 7,310 public schools in the U.S. identified supportive principal attitudes as a reason teachers remained in the profession (Olsen and Huang, 2018).

Principals with supportive attitudes toward teachers will likely create an academic environment where teachers thrive and are understood. Player et al. (2017) argue that regardless of the school and teacher characteristics, principal leadership in support significantly influences teacher interest in the passion for educating youth. Additionally, support received to assist with instruction delivery is a fundamental need of teachers, and when this need is met, teachers are likely to feel they can function with ease. Principal support has the most significant impact on the teacher retention model compared to other factors. Job satisfaction is correlated with an incredible feeling of supportive leaders (Whynn et al., 2007). Furthermore, principal support is a protected characteristic that enhances teachers' job satisfaction and reduces the potential for teacher burnout and turnover (Olsen and Huang, 2018).

Clear communication is another principal characteristic revealed as a predictor of teacher retention. The findings of this systematic review show that when principals communicate the school vision, school operating procedures, and expectations, they positively affect teacher retention rates (Singh and Billingsley, 1998; Wynn et al., 2007; Urick, 2016; Player et al., 2017; Olsen and Huang, 2018). Player et al. (2017) emphasized that communicating school visions to staff and working together to achieve the vision builds team cohesion and increases teacher retention rates if embraced. Using national data regarding Pre-K-12 public school teachers, Olsen and Huang (2018) advised that communicating expectations, procedures, and school operations to teachers can promote teacher retention. Through clear communication, principals articulate clear objectives that enable teachers to stay mission-focused and engaged, reinforcing purpose. When overwhelmed with responsibilities, a sense of purpose and understanding of the school's mission can easily redirect teachers to their passions for education.

Recognizing teachers for a job well done is another characteristic consistently reported to increase teacher retention rates in the United States (Singh and Billingsley, 1998, Urick, 2016; Player et al., 2017; Olsen and Huang, 2018). A sense of appreciation makes teachers feel valued and validates their commitment of teachers to the profession. Teachers tend to resign from schools where they are not appreciated for their accomplishments and roles in educating youth. A teacher is inclined to remain at a school where they feel valued. Lambersky (2016) argued that by recognizing and appreciating teachers' abilities, commitments, and sacrifices, principals could influence the emotions of teachers and compel teachers to remain at a school.

Enforcing disciplinary action to control students' behavior and backing teachers in such actions are vital. Respecting the authority of teachers to make the best decisions for the development of students can build upon the trust teachers have in their principals (Boyd et al., 2010, Urick, 2016; Player et al., 2017, Olsen and Huang, 2018). Principals who evaluate teachers fairly are likely to have highly committed teachers, and the teachers are less likely to leave the school and teaching profession (Singh and Billingsley, 1998; Youngs, 2007; Boyd et al., 2010). A fair and honest evaluation of teacher performance enables principals to communicate the areas in which teachers excel and areas in which improvements are necessary. Evaluations foster trust and understanding between teachers and principals, and this trust enhances teacher satisfaction and gives a reason for teachers to stay at the school where they work.

In most cases, allocating adequate resources to facilitate teaching is a common stressor for teachers. When teachers have the tools to do their jobs, teacher interest is sustained in the profession (Wynn et al., 2007; Boyd et al., 2010). Gersten et al. (2001) stated that lack of resources and information are essential factors why teachers leave schools. Protecting teachers from external pressures makes teachers develop more confidence in principals, as teachers feel supported (Youngs, 2007; Boyd et al., 2010). Providing support is a way of affecting teachers' psychological and emotional stability, and ultimately behaviors. A Canadian study by Lambersky (2016) explains that teachers who experience harassment and threats tend to transfer to other schools or quit teaching.

The principal's professional commitment and growth characteristics also contribute to teacher retention. Brown and Whynn (2009) and Grissom et al. (2019) reported that principals with high professional commitment and dedication to learning and growth inspire teachers to stay committed. Committed principals encourage professional

development and improve teachers (Young, 2007).

Respect for teachers is another principal characteristic. Giving teachers the necessary respect builds trust and camaraderie between teachers and principals, thus creating a harmonious environment (Easley, 2007). Communication and interaction become easy when there is respect and trust, as the teacher believes the principal is approachable and sensible. When principals are helpful and communicative, they can retain teachers (Singh and Billingsley, 1998).

Communication through counseling can go a long way and creates a community facet to the school environment for teachers. Principals who communicate regularly with their teachers will likely know when to reduce teacher responsibilities under stressful conditions to avoid low turnover and burnout, which can lead to attrition (Wynn et al., 2007). A principal who provides constant feedback is likelier to have a high retention rate because less focus is given to less critical issues and emphasis is placed on the right thing (Easley, 2007). Teacher autonomy is another important component of teacher retention issues. Allowing the influence and authority of teachers over their students while remaining in compliance with school practices and policies is critical to empowering teachers in their roles. When teachers are not entrusted to function fully in their roles, they may find another place of employment. A survey was conducted using 4,360 New York City teachers in one of the included studies. Analysis of the survey findings shows that school principals who include teachers in processes, such as selecting curriculum and resources, scheduling activities, and choosing professional development opportunities, satisfy teachers and their sense of autonomy, which affects their decisions to remain with the school. An analysis of 50,000 Chicago public school teachers by Allensworth et al. (2009) shows that teachers remain committed to schools where they have a voice in school decisions. Gersten et al. (2001) added that limited decision-making power could affect teacher retention. Creating border district and bureaucratic dysfunction by the principal is a negative characteristic that affects school retention (Easley, 2006). Dahlkamp et al. (2017) added that principal self-efficacy does not significantly affect teachers' retention rates.

Limitation and future research

The findings of this systematic review are limited to elementary and secondary schools within the United States, and thus, generalizations cannot be made. However, some of the conclusions of the studies used for this systematic review are like the findings of studies conducted outside of the U.S. Also, the results of the studies used in this review were not specific to either rural or urban schools. There is a need for more thorough research on factors that hinder and contribute to teacher retention in elementary and secondary schools. This systematic review identifies the need for more empirical research on this topic, as few or no studies have been published on these issues in the U.S. within the last four years.

Conclusion

This systematic review summarized the principal characteristics of teacher retention in U.S. elementary and secondary schools. The findings of this study have contributed to the education field and teachers' advocacy for retention. The results of this study suggest that principal characteristics, particularly the support for teachers and open, clear communication, have a considerable impact on teacher retention rates. Schools where principals fail to display support for teachers and where standards and expectations are not communicated effectively experience low retention rates. Recognizing teachers for a job well done is an essential characteristic of principals that must be considered to encourage teacher commitment and reduce attrition. Fair teacher evaluations and adequate resource allocation contribute to improved teacher retention rates. It is pertinent to understand that school principals who support teachers during student disciplinary actions enhance teachers' trust and respect for them. Teacher inclusion in school decision-making processes increases the school value system. Allowing the teacher to contribute will make them feel valued as an integral part of the school system. Inclusion enhances the likelihood of teachers staying at a school and continuing to work in the education profession. When principals of elementary and secondary schools are willing to use practical management skills to care about the teachers charged with educating youth, teachers want to remain committed.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

Allensworth E, Ponisciak S, Mazzeo C (2009). The schools teachers leave: Teacher mobility in Chicago public schools. Chicago: Consortium on Chicago School Research at the University of Chicago Urban Education Institute.

Boyd D, Grossman P, Ing M, Lankford H, Loeb S, Wyckoff J (2010). The influence of school administrators on teacher retention decisions. American Educational Research Journal 48(2):303-333.

Brown KM, Wynn SR (2009). Finding, Supporting, and Keeping: The Role of the Principal in Teacher Retention Issues. Leadership and Policy in Schools 8(91):37-63.

Buchanan J (2010). May I be excused? Why teachers leave the profession. Asia Pacific Journal of Education 30(2):199e211.

Carlsson R, Lindqvist P, Nordänger UK (2019). Is teacher attrition a poor estimate of the value of teacher education? A Swedish case. European Journal of Teacher Education 42(2):243-257.

Carmel R, Badash M (2018). Views on attrition and retention among beginning English as a foreign language (EFL) teacher in Israel and

implications for teacher education. Teaching and Teacher Education 70:142-152.
Israeli Central Bureau (2019). Internal mobility and attrition among teachers, 2000-2018 (Hebrew). Press release. https://bit.ly/2Uvhvuf.
Dahlkamp S, Peters ML, Schumacher G (2017). Principal Self-Efficacy, School Climate, and Teacher Retention: A Multi-Level Analysis. Alberta Journal of Educational Research 63(4):357-376.
Easley II J (2006). Alternative route urban teacher retention and implications for principals' moral leadership. Educational Studies 32(3):241-249.
Easley II J (2008). Moral school building leadership. Journal of Educational Administration 46(1):25-38.
Foster D (2019). Teacher recruitment and retention in England. House of commons briefing paper #7222. House of Commons Library.
Garcia E, Weiss E (2019). The teacher shortage real, large and growing, and worse than we thought. Economic Policy Institute. https://www.epi.org/publication/the-teacher-shortage-isreal-large-and-growing-and-worse-than-we-thought-the-first-report-in-the-perfect-storm-in-theteacher-labor-market-series/.
Gavish B, Friedman IA (2010). Novice teachers' experience of teaching: A dynamic aspect of burnout. Social Psychology of Education 13(2):141-167.
Gersten R, Keating T, Yovanoff P, Harnis MK (2001). Working in Special Education:Factors that Enhance Special Educators' Intent to Stay. The Council for Exceptional Children 67(4):549-567.
Gomba C (2015). Why Do They Stay: Factors Influencing Teacher Retention in Rural Zimbabwe. International Journal of Instruction, 8(2):55-68.
Grissom JA, Bartanen B (2019). Strategic retention: Principal effectiveness and teacher turnover in multiple-measure teacher evaluation systems. American Educational Research Journal 56(2):514-555.
Hancock CB, Scherff L (2010). Who Will Stay and Who Will Leave? Predicting Secondary English Teacher Attrition Risk. Journal of Teacher Education 61(4):328-338.
Hazell W (2018). Exclusive: England needs 47,000 extra secondary teachers. TES. https:// www.tes.com/news/exclusive-england-needs-47000-extra-secondary-teachers.
Ingersoll RM, May H (2012). The magnitude, destinations, and determinants of mathematics and science teacher turnover. Educational Evaluation and Policy Analysis 34(4):435e464.
Kraft MA, Marinell WH, Shen-Wei Yee D (2016). School organizational contexts, teacher turnover, and student achievement: Evidence from panel data. American Educational Research Journal 53(5):1411-1449.
Ladd HF (2011). Teachers' perceptions of their working conditions: How predictive of planned and actual teacher movement? Educational Evaluation and Policy Analysis 33(2):235e261.
Lambersky J (2016). Understanding the Human Side of School Leadership: Principals' Impact on Teachers' Morale, Self-Efficacy, Stress, and Commitment. Leadership and Policy in Schools 15(4):379-405.
Olsen AA, Huang FL (2018). Teacher job satisfaction by principal support and teacher cooperation: Results from the Schools and Staffing Survey. Education Policy Analysis Archives 27(11).
Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. International Journal of Surgery 88:105906.
Player D, Youngs P, Perrone F, Grogan E (2017). How principal leadership and person-job fit are associated with teacher mobility and attrition. Teaching and Teacher Education 67:330-339.
Ronfeldt M, Loeb S, Wyckoff J (2013). How teacher turnover harms student achievement. American Educational Research Journal 50(1):4e36.
See BH, Morris R, Gorard S, Soufi NE (2020). What works in attracting and retaining teachers in challenging schools and areas? Oxford Review of Education 46(6):678-697.
Semarco SK, Cho S (2018). The predictive influence of principal task-oriented managerial leadership behaviors on teachers' retention intentions in Ghana. Educational Management Administration and Leadership 46(6):908-925.
Singh K, Billingsley BS (1998). Professional Support and Its Effects on Teachers' Commitment. The Journal of Educational Research 91(4):229-239.
Sutcher L, Darling-Hammond L, Carver-Thomas D (2016). A coming crisis in teaching? Teacher supply, demand, and shortages in the US Research Brief. Learning Policy Institute.
TES Global (2019). In-school effort to solve teacher crisis as shortage hits 50,000. Online newsletter. https://www.fenews.co.uk/press-releases/35537-in-school-effort-to-solve-teacher-crisis-asshortage-hits-50000.
Thomas L, Tuytens M, Devos G, Kelchtermans G, Vanderlinde R (2020). Transformational school leadership as a key factor for teachers' job attitudes during their first year in the profession. Educational Management Administration and Leadership 48(1):106-132.
Tillman LC (2005). Mentoring new teachers: Implications for leadership practice in an urban school. Educational Administration Quarterly 41(4):609-629.
Urick A (2016). The influence of typologies of school leaders on teacher retention. Journal of Educational Administration 54(4):434-468.
Wynn SR, Carboni LW, Patall EA (2007). Beginning Teachers' Perceptions of Mentoring, Climate, and Leadership: Promoting Retention through a Learning Communities Perspective. Leadership and Policy in Schools 6:209-229.
Youngs P (2007). How Elementary Principals' Beliefs and Actions Influence New Teachers' Experiences. Educational Administration Quarterly 43(1):101-137.

Vol. 18(6), pp. 114-128, June 2023
DOI: 10.5897/ERR2023.4332
Article Number: F7D7A3970741
ISSN: 1990-3839

http://www.academicjournals.org/ERR

ACADEMIC JOURNALS
expand your knowledge

Educational Research and Reviews

Full Length Research Paper

21st Century Skills and Learning Environments: ELT Students' Perceptions

Feyza Nur Ekizer* and Seyda Sarı Yıldırım

English Language Teaching Department, Necmettin Erbakan University, Turkey.

Received 13 April, 2023; Accepted 15 May, 2023

This study aimed to explore the perceptions of English Language Teaching (ELT) students regarding 21st century skills and learning environments. A qualitative content analysis method was used, which involved conducting semi-structured interviews with 62 ELT students. The findings of the study revealed that ELT students perceive critical thinking, problem-solving, collaboration, creativity, and effective communication as essential 21st century skills. They also believe that these skills can be developed through engaging and dynamic learning environments that incorporate technology, project-based learning, and real-world applications. The results of this study have important implications for ELT educators and curriculum developers, as they suggest the need to create learning environments that are engaging, dynamic, and incorporate technology, project-based learning, and real-world applications. The findings also highlight the importance of preparing ELT students for success in the 21st century by developing 21st century skills. This study provides valuable insights into ELT students' perceptions of 21st century skills and learning environments, which can inform the design of ELT curricula and the development of teaching practices.

Keywords: 21st century skills, learning environments, 4c skills, English language teaching, English Language Learning, English as a Foreign Language

INTRODUCTION

A globally connected and globalized world exists in the 21st century. In this increasingly interconnected world, the power of online technology has altered how individuals live their lives in terms of social contact, employment, commerce, religion, and other spheres. The COVID-19 epidemic, which has compelled people to live virtually online while under lockdown, makes clear the potential of such technology. It affects almost every nation on earth. Education, in particular, is one sector that emphasizes the necessity of comprehending 21st century abilities. Several scholars have focused on education to better understand the needs, developments, and roles of both students and instructors in the 21st century (Rahmadani et al., 2019). The internet and computer technology have come to the fore to represent the 21st century. Every element of human life, including business, health, education, recreation, and social contact, has been impacted by the rapid progress in these fields. Seng

*Corresponding author. E-mail: fyznur@hotmail.com.

et al. (2020) state that each of us must reevaluate the way we work, conduct business, teach, learn, and communicate with one another in order to meet the requirements of the 21st century. According to Kaufman (2013), the competencies that make up 21st century skills include critical thinking and problem-solving abilities, communicative skills, information and media literacy skills, contextual learning skills, and an ever-vital cooperation skill set. Instructors should also integrate these qualities into their core content areas to inspire students to appreciate learning. According to Fandino (2013), education of important courses like English, Science, and Mathematics must explicitly incorporate learning methodologies, digital competencies, and career abilities. Moreover, students in EFL classes should be exposed to a variety of activities and procedures with an emphasis on developing their creativity, critical thinking, teamwork, self-direction, and cross-cultural competence.

The Partnership for 21st Century Skills (Guo and Woulfin, 2016; Voogt and Roblin, 2010; Irgatoğlu et al., 2022) is a non-profit organization that places a strong emphasis on the explicit integration of learning and innovation skills, information, media, and digital literacy skills, and life and job skills. It is assumed that students who graduate from systems of education that incorporate these 21st Century Learning Skills (CLS) would be well-rounded people who have the necessary knowledge and attributes to succeed in any environment. Numerous examples of 21st century abilities have been identified (Geisinger, 2016). Skills such as cooperation, communication, and critical thinking are essential for the 21st century (Gkemisi et al., 2016). Communication, and especially effective communication, is an age-old requirement for humanity, as is the ability to think critically and solve problems (Berger, 2016). Such skills form the basis for cooperativity and other 21st century abilities, as they are built on social interaction (Gkemisi et al., 2016; Bulus et al., 2017; Irgatoğlu, 2021). One of the essential abilities for today's corporate and educational environments is cooperation. Due to increasing workloads, people are expected to work in groups or teams (Lewin and McNicol, 2015; Marbach-Ad et al., 2019). Cooperation is essential for working towards shared goals and adhering to the rules of cooperation such as respect, encouragement, and assistance (Trilling and Fadel, 2009). Moreover, it is required for the disclosure of other abilities (Neubert et al., 2015). Algorithmic thinking is another crucial skill for today's corporate and educational settings. It involves planning the actions or course of action needed to achieve the desired objectives (Doleck et al., 2017; Irgatoglu and Pakkan, 2020). Digital literacy is also important in today's digital world (Kocak et al., 2021). It consists of technological and mental competencies (Lewin and McNicol, 2015). It is a fundamental ability for resolving technological, cognitive, social, and communicational issues, especially in the digital age (Eshet-Alkalai, 2004). Kocak et al. (2021) remind us that the 21st century has brought about major changes in people's lives in numerous areas, including communication, learning, and the economy and production. The technological platforms and tools recently developed have focused on the lives of individuals, and this, together with changes in all aspects of society, has created social, economic, and academic lives that are far more demanding and complex than before. As such, the demands of the 21st century require individuals to develop new abilities, some of which are referred to as 21st century skills, while others are timeless. Therefore, rather than continuing with a content-based approach, schools need to concentrate on developing these skills in their students, so that they are adequately prepared to meet the obligations placed upon them after graduation. This is particularly pertinent in developing nations such as Turkey, where there is still much debate about the extent to which education can address 21st century skills.

The 21st century talents, according to Munteanu (2016), are a collection of competencies that students must master to survive in the information society. Three categories of skills are suggested by the Partnership for 21st Century Skills (P21) (2015), including life and career skills, learning and innovation skills, and information, media, and technology skills. While information, media, and technology skills include information literacy, media literacy, and ICT literacy, life and career skills encompass flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, leadership and responsibility. Learning and innovation skills cover the 4Cs, or Creativity and innovation, Critical thinking and problem solving, Communication, and Collaboration, according to Partnership for the 21st Century (2015). Furthermore, according to P21 (2015), the first C (creativity and innovation) includes abilities to think creatively, collaborate creatively with others, and put inventions into practise. The second skill is critical thinking and problem solving, which involves being able to apply systems of thought, reason, form judgments and decisions, and resolve issues. The final two Cs, communication and collaboration, allude to the ability to cooperate with others and communicate clearly. Learning and innovation abilities are increasingly being recognized as those that distinguish students who are prepared for a larger and more complicated life and work situations in the 21st century from those who are not, as advocated by the Partnership for the 21st Century (2009). To prepare pupils for the future, a focus on creativity, critical thinking, communication, and teamwork is essential. To develop citizens and employees that are appropriately equipped for the 21st century, these skills need to be integrated into classrooms, schools, and districts across the nation.

To get back to the issue at hand, English foreign language (EFL) students tend to have varied backgrounds, a multiplicity of achievement levels, and

diverse learning styles, which impact their ability to learn and use the foreign language (Ananiadou and Claro, 2009). At the same time, these learners are not only interested in achieving a high command of the different language skills needed in social situations; they are also concerned with the acquisition of the formal academic skills demanded at university. Therefore, the EFL classroom needs to move away from traditional methods focused on language mastery and start incorporating new approaches aimed at integrating content, culture, technology, and lifelong skills (Taylor, 2009). It is clear that the EFL classroom of today differs from one from the mid-to late 20th century. The evolving and adaptable nature of literacy that covers topics as diverse as technology, multimedia, relationships, and culture must be accepted by English teachers and everyone related to teaching English. The English classroom must, therefore, be a setting that can address the plurality and integration of a growing number of diverse modes of meaning-making, where the textual is related to the visual, the aural, the spatial, and the behavioral. One possible way to answer to the new interests and demands of our learners and our society is the explicit, but critical work with what experts have called 21st century skills.

According to Ledward and Hirata (2011), 21st century skills are a blend of content knowledge, specific skills, expertise, and literacies necessary to succeed in work and life. These skills go beyond mere technological literacy and include proficiency in critical thinking, problem solving, communication, and teamwork. Through the mastery of these skills, people gain the ability to access, synthesize, and communicate information; work collaboratively across differences to solve complex problems; and create new knowledge through the innovative use of multiple technologies, thus allowing them to thrive in the new environment.

LITERATURE REVIEW

Skills and 4 foreign language skills

Recent studies have emphasized how crucial it is to train English speakers to become fully competent language users, critical thinkers, and effective social change agents (Sun, 2016). As a result, instead of simply emphasizing language acquisition and imitating native English speakers, ELT now seeks to instill in pupils a sense of social responsibility. Similarly, Eaton (2010) argues that grammar, memory, and rote learning should no longer be the primary focus in EFL classrooms today. Instead, they should be seen as places where people can discover how to communicate with others from all over the world by using their language and cultural background. There is a case for a field that is more learner-centered, collaborative, and technologically driven, according to Eaton (2010). Teachers can take advantage of new and innovative frameworks and methods as part of this reconceptualization of the EFL classroom. Now, according to Fandio (2013), EFL classrooms should be full of purposeful and intellectually stimulating activities, practices, and processes that enable students to not only articulate thoughts and ideas using oral, written, and nonverbal communication effectively, but also to understand complex perspectives, reach judgments and decisions, and collaborate creatively with others. Teachers must therefore critically evaluate what the 21st century movement has to offer in order to improve their pedagogical procedures and instructional methods. According to Davila (2016), by incorporating the 4Cs into EFL classes, a routine grammar lesson can be transformed into a magical experience in which teachers play a more active role as facilitators and students develop into motivated, self-directed learners while still adhering to the curriculum's guidelines. Erdogan (2019) asserts that utilizing 21st century abilities in the classroom has nothing to do with teaching at all. These abilities, which are the ones that will ensure our student's success in the future, will reflect how capable and inquisitive they are as individuals. A sequence of activities may be arranged, lessons/lectures may be scheduled, and materials may be prepared to focus on certain abilities in order to attain goals. Halverson (2018) suggests that when students are encouraged to investigate a topic, discuss or debate that topic with peers, and then write about what they find, all four language skills can be easily activated, and these activities don't require high levels of English ability. Lessons in EFL classes can be developed cross-curricular and may have multiple aspects to focus on 4C skill development. In this regard, it is important to consider how these skills might be taught in an EFL classroom. According to the National Education Association (2015), language teachers can more successfully incorporate the 4Cs into their lessons if they set some guiding questions for themselves as they create objectives and plan their activities. Each ability should be thoroughly covered in the sections that follow.

Communication skill

EFL programs are the ideal setting for improving students' communication skills, as one of the primary objectives of learning a foreign language is to be able to communicate in that language effectively. According to Trilling and Fadel (2009), students should be able to communicate successfully in a range of settings, using oral, written, and nonverbal methods, as well as being able to listen attentively and use communication for various purposes. It is important to note that effective communication entails more than just grammatical and lexical abilities; it includes the capacity to communicate appropriately based on the context, speakers, subject, audience, and time and location. Al-Mahrooqi (2012) states that, for many employers, communication skills are

more critical than the subjects covered in degree programs, as effectively conveying and managing complex information is a key skill in many professional fields. With the use of ICT technology, individuals are able to interact with people from all around the world, as well as those in their immediate environment. Ananiadou and Claro (2009) explain that ICT applications encourage the growth of coordination and peer collaboration skills, as well as reinforcing and widening communication opportunities. To engage in and contribute positively to the digital culture, young people must be able to communicate, exchange, critique, and present information and ideas. This includes using ICT applications. To foster our students' communication skills, we can give them authentic/real-life opportunities to interact with their peers and require them to use cutting-edge technological tools like social media, blogs, web 2.0, e-mail groups, Google classes, etc. As a result, they will be able to converse with students from different societies, which is essential for studying in the 21st century. We can also take advantage of opportunities such as e-Twinning, sister schools, and student exchange programs to let kids connect and communicate with friends all around the world. In the current digital age, there are many activities that can be developed to improve communication abilities, but it is clear that all viable options simultaneously build the 4 primary language skills.

Collaboration skill

Collaboration is the act of working together with others to achieve a common goal, according to Applied Educational Systems (2019). Students will likely have to collaborate in some capacity for the rest of their lives, thus collaboration is an essential skill to master. Collaboration exercises help students learn how to analyze an issue, present solutions, and determine the best course of action. They learn the value of understanding that not everyone has the same views as them. According to Lai (2011), collaboration requires participants to work together on the same task rather than each working on different parts of the assignment, and it can have positive impacts on student learning, particularly for those who have difficulty performing academically. However, Lai states that it is essential to structure collaborative tasks in a way that explicitly encourages the development of skills such as coordination, communication, dispute resolution, decision-making, problem solving, and negotiation. Collaborative exercises can also improve students' speaking, listening, reading, and writing skills when used in a comprehensive approach. According to Palmer (2015), cooperation should extend beyond simply sending documents via email or making PowerPoint presentations; working together to create digital resources, presentations, and projects will make classroom activities more like real-world experiences. Moreover, producing short videos on a particular subject, creating short stories, finishing half-stories, and deriving conclusions from reading material can all be effective strategies to foster cooperation skills in a language class. Nonetheless, Roberts (2016) underlines that it is crucial to request that students evaluate how successfully they have collaborated or offer suggestions for how to do so. This 21st Century skill can be made more apparent by asking one group member to watch and record information, such as how many contributions each group member made or who assumed a leadership role, and then have a group discussion about the notes.

Creativity skill

Creative activities are instruments that enable students to convey what they have learned in fresh ways, according to the Oxford University Press ELT (2013). This information synthesis and personalization strengthens learning and provides an experience that students remember long after the lesson has ended. Everyone can be creative under the right circumstances, according to Maley and Bolitho (2015), especially when it comes to language because it allows us to construct new associations, outrageous concoctions, and original interpretations. Moreover, even at the primary level, these alternatives can be explored and enjoyed in the English classroom. Teaching creativity and topic comprehension go hand in hand, according to the Center for Curriculum Redesign (2015). Instead of paper and pencil exercises with a single correct response, open-ended, problem-based learning is more likely to inspire students to think creatively. However, teachers should set up helpful boundaries for students to be innovative within, in line with the learning outcome they hope to achieve. According to Read (2015), when we integrate creative thinking in English lessons, students develop relevant cognitive skills that are necessary for all subject areas of the curriculum, as well as metacognitive skills such as the ability to assess and critically think about their own performance and learning outcomes.

Critical thinking and problem solving skills

According to Kivunja (2015), the ability to employ one's general cognitive processing skills for higher-order thinking tasks such as analyzing, assessing, and inventing new ideas or products allows people to engage in deep thought and find novel solutions to unfamiliar situations. Another definition of critical thinking is a process that requires someone to utilize introspective, logical, and rational thinking in order to gather, analyze, and evaluate data, and use that information to reach an informed conclusion (University of Sydney, 2014). Problem-solving is another key element of critical thinking, requiring students to use the knowledge, facts, and data they have

acquired to reach a solution (Herrmann, 2015). This requires them to make appropriate decisions and judgments, use inductive and deductive reasoning as necessary, and analyze complex systems to determine how different components interact with one another.

METHOD

A qualitative data collection procedure was adopted to carry out the present study. Initially, at the beginning of the second academic term of the 2021-2022 education year, the necessary ethical approval was obtained from the institution aforementioned and consent forms were distributed to the students relevant. The study was totally on a voluntary basis. This study aimed to explore ELT students' perceptions of 21st century skills and learning environments. To achieve this aim, a qualitative content analysis method was used. Qualitative content analysis is a research method that involves the systematic analysis of textual data to identify patterns, themes, and meanings (Krippendorff, 2013). This method was chosen because it allowed for the in-depth exploration of ELT students' perceptions and experiences, providing a rich and nuanced understanding of the topic. Data was collected via semi-structured interviews with 62 ELT first-class students studying at Necmettin Erbakan University. The study was implemented in the second semester of the 2021/2022 academic year. All participants gave their consent to participate and the study was conducted in accordance with relevant ethical guidelines.

Semi-structured Interview Questions

1. Describe your ideal study environment or culture.
2. What characteristics did the best teacher you've ever had – or wished you'd had - exhibit?
3. Describe your preferred teaching style.
4. Describe the most effective roles that you believe a good teacher can play in his or her relationship with students.
5. What is the single most important factor that must exist in your study environment for you to succeed?
6. What is your preferred method of studying? Do you prefer studying by yourself or in a group? Given the option, how much time would you devote to each?
7. What are your top three to five teacher expectations?
8. Describe your most likely role on a team.
9. How do you process information in theage of technology?
10. What steps do you take when searching for information on the internet?

Population and sampling

This study was conducted with 62 first-year students from the English Language Teaching Department of Necmettin Erbakan University in Konya, Turkey. As this was a qualitative study, a semi-structured interview was used to gather data. Convenience sampling was used for the selection of participants, which entails selecting participants based on their relative ease of access (Wiederman, 1999). All participants were informed about the research, the interview questions, and the research process in detail.

Data collection and analysis

Data were collected through semi-structured interviews with ELT students. The interview questions were designed to elicit students' perceptions of 21st century skills and learning environments. The interviews were conducted in person and lasted approximately 30 minutes each. A total of 62 ELT students participated in the study. The data collected from the interviews were transcribed and then analyzed using qualitative content analysis. The data were read and reread several times to gain a sense of the overall content and identify emergent themes. The data were then divided into segments and coded, with similar codes being grouped together and patterns and connections between the codes being explored. The coded data was organized into themes and relationships between themes were explored. Finally, the themes were reviewed and refined. The final themes were used to construct a narrative that captured the key findings of the study. To ensure the trustworthiness of the study, several steps were taken. First, the study was reviewed and approved by an ethics committee to ensure that the rights of the participants were protected. Second, the study was conducted by the lead author, who has extensive experience in qualitative research. Third, the study was reviewed by an independent expert in the field of ELT education, who provided feedback on the methodology and findings. Finally, the data was analyzed by two independent coders to ensure reliability and consistency in the coding process, and to verify the accuracy of the findings. In conclusion, the qualitative content analysis method used in this study provided a rich and nuanced understanding of ELT students' perceptions of 21st century skills and learning environments. Through an in-depth exploration of students' experiences and perspectives, and with steps taken to ensure the trustworthiness of the study, the results give valuable insights into the topic.

FINDINGS AND DISCUSSION

Figure 1 presents the findings on life skills that are among the 21st century skills. These findings, based on the factors required by students in their study environments, provide evidence of competencies related to the flexibility, productivity, and social skills sub-dimensions of students' life skills. As a consequence of analysing the students' statements, it was concluded that silence (f:14) was the most important aspect of their study environment. The students asserted that they could not conduct an efficient process if there was insufficient stillness in their study environment, citing silence as a prerequisite. The second most important factor that students required in their study environment was motivation (f:10). Noting that they could not conduct an effective study process without sufficient motivation, the students highlighted motivation as one of the most crucial components. Some students responded that their setting should provide sufficient resources (f:5) for efficient study. The scope of these resources ranges from online sources to printed documents, depending on the activity performed. Students also identified the presence of others working in the surroundings (f:3) as a factor. In contrast to the silent factor, the students claimed that in order to be motivated, they needed to be surrounded by individuals who had a positive impact on their work. Some students claimed that a good study environment required the presence of soothing music (f:3). The loneliness (f:2) factor, which is one of the necessary study environment components, plays a similar function

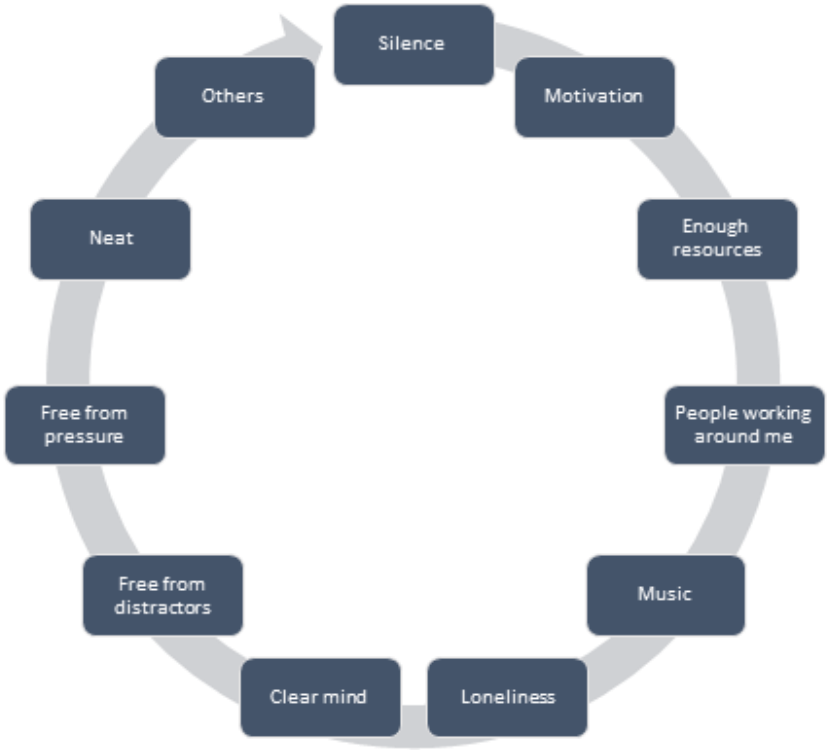

Figure 1. Factors that should be presented in a study environment.
Source: Authors

as the quiet factor and symbolises a more rigid setting than the relevant factor. The students who voiced their ideas on this code indicated that they were required to operate alone in their study environments and that this circumstance was essential for them. The clear mind (f:2) aspect, which was one of the reasons identified by the students, referred to the students' circumstances rather than the location's conditions. Students who indicated that they must have a clear mind (f:2) in order to fully concentrate on their works stated that they would not be able to achieve sufficient efficiency if this were not the case. In addition, the students stated that their environment should be clean and neat (f:2), free of distractions (f:2) and pressure (f:2) and that factors such as adequate lighting in the environment (f:1), no phones in the environment (f:1), coffee in the environment (f:1), a large environment (f:1), and the presence of things they enjoy in the environment (f:1) are essential for them to work efficiently. When the factors that should be present in the study environment of the students are examined, it is determined that the students cannot carry out efficient work without certain conditions in general. This situation can be seen as a negative result in terms of life skills, which are among the 21st century skills. Especially in the sub-dimensions such as flexibility, productivity and social skills among these skills, individuals are expected to have developed social skills that can adapt to different environments, carry out efficient work even if there are external factors and be productive. However, the fact that students need environments away from silence, loneliness, distractions, and pressure in order to carry out productive work is not in accordance with the definition of an individual characterized in 21st century skills. Although this situation is seen in students in general, it can be said that there are students who fit the definition of an individual in 21st century skills. Especially students who indicate that there may be different individuals in their environment can be evaluated in accordance with this definition in terms of being productive despite distractions and socializing. The following are some student remarks about the factors shown in Figure 1:

“I prefer quiet, relaxing space where I can focus and get work done.” (PF18)

“ I don't think environmental factors make much of a difference for me. The single most important factor is that I have to study with love.” (PM21)

“I prefer to work quietly in my own room because I don't like to work in other places such as the library. My desk should be tidy so that I don't get distracted.” (PF40)

“I would like to be in an environment that is as moral as possible and where everyone respects everyone. I want people like me, who are happy with the smallest things,

Figure 2. Study preferences of the students.
Source: Authors

who will lead me to explore the world." (PF53)

"I have to be able to access everything in my working environment. So working at home is better for me. Also, the presence of music in the environment I work affects my productivity." (PF58)

"My most productive and happy studying environment consists of a big cup of coffee and my headphones. If I have coffee and headphones on a tidy table, that place becomes my most productive and happy place. If the environment is messy first, I clean it up and then I start working on the subject that I have to do." (PF37)

"The moment that I have a relaxed mind and pay full attention to my work is when I am alone in a room, I am familiar with, along with my personal tools. In an environment like this, I would be in my most productive and content form." (PF47)

"Another factor I pay attention to is that I cannot focus on whatever subject I am studying if there is someone else in the room who is busy with irrelevant work. I also get distracted easily if it is noon. In other words, the time of the day at which I am studying matters as well. Lastly, the place where I am studying should be large enough, so that I feel comfortable studying there." (PF48)
"The environment in which I am happy to work becomes one in which people do not enter into unnecessary competitions, where everyone helps each other and ignores their flaws. In such conditions, you will not be nervous, and I can handle your job easily. And the happier I am, the more comfortable I work. And because I work comfortably, I become more productive and successful." (PF27)

"First and foremost, my work environment should be clean and neat. A messy and untidy environment makes me feel very uncomfortable and reduces my motivation, determination, and concentration to study." (PF54)
"I am happy when my study environment is silent. Also, it is so significant that my place I study has to be enough in terms of light. There is another significant thing that I need technology to be productive. If these all conditions are supplied me, then I can do my best." (PM59)

Figure 2 presents study preferences of the students. Out of the 62 students who participated in the study, 4 stated that they could study both alone and in a group as a working style and that it made no difference to them; 5 students preferred to study in a group; and 53 students generally preferred to study alone. When the statements of students who preferred to study alone were analysed, it revealed that the most often repeated reason was better concentration (f:27). The students responded that one of the most essential features of studying alone was the ability to concentrate better on the subject at hand, which was not possible when studying in groups.

Furthermore, the students noted that group work was hampered by group members' distracting talks and their

inability to comprehend the material. Another reason frequently cited by students who preferred to study alone was the time-saving feature of this style (f:13). They stated that this situation was not possible when working in a group, as they often lost a lot of time due to situations such as sharing work among group members, reaching common ideas, and bringing information together.

On the other hand, those who preferred to work alone reported that this allowed them to focus more easily and complete their work quickly without being exposed to any external factors. Some students mentioned the exchange of ideas, but emphasised that studying alone was more productive (f:9). These students reported feeling pressured when working with a group, and claimed that this negatively impacted their productivity and that they were insufficiently productive. Furthermore, they claimed that they did not encounter such a circumstance when studying alone and continued to work according to their own learning styles. Regarding group work, five codes were found to categorise the reasons why students who preferred group work did so, albeit less than those who preferred to study alone. Those who preferred to work with the group stated that they learned something from their friends in the group thanks to group dynamics and that this led to peer learning (f: 3). They also reported that while studying with a group, new ideas are generated (f: 2) and they are able to be more creative due to the exchange of ideas among group members. According to the students, studying with a group provides advantages such as having sense of responsibility (f:2), having less workload (f:1) thanks to task sharing and thus saving time (f:1)by carrying out a rapid process. The following are some student remarks about the roles shown in Figure 2:

"I normally like to study alone since it allows me to evaluate the subjects in which I believe I am failing. Besides, it is easier to focus on my studies when I am on my own. There is only me and my problems to solve and I only spend time for myself. On the other hand, when I am being a part of a team, there are so many things to be handled with and it takes much more time. For example, there is a subject I do not understand, and I want to solve it, it takes an hour; however, the more people, the more problems so the more problems the more time you need." (PF52)

"Obviously studying alone. Whenever I find myself studying with others, I cannot wait to show them something or talk about another thing which ends the studying process in about 20 minutes at most." (PM2)

"I prefer studying alone because I think I get the best when I work in that way. Working as a part of a team distracts me a lot, I can't concentrate, and I think it's a bit of a waste of time. In addition, when working as a part of a team, each individual has a unique idea, and this causes great confusion." (PF9)

"I would prefer to work alone. I like to work individually because I can organize everything in my own way, and I am responsible for everything I do." (PF13)

"Although I am very good at teamwork, I still choose to study alone. I am much more comfortable, and I can choose my working style." (PF37)

"Studying alone is always freer and more comfortable. I can devote most of my day to studying alone." (PM21)

"In some scenarios, teamwork could be more effective owing to the different, unique ideas of others. On account of time and effort, the percentage of the time and effort that give while studying alone is so much more than the group work. I could easily say that if the time in the personal working is 24 hours, it is 12 hours in group work. So, we can conclude that the group work decreases the time frequently. And of course, the effort too." (PF48)

"I prefer studying as a part of team. For example, Tuesday I failed in my presentation alone, but on Thursday we did it as a group for Galiphoca and we succeeded. I trusted them and they trusted me. The thing is I'll give my all day for group studying." (PF30)

"I love them both and both of them are beneficial in different ways but recently I have realized that working with a group of friends can be better than studying alone because we can see different perspectives about the subject and while talking about it over and over again and we can make them permanent." (PF17)

"I used to work alone but nowadays I study with my friends, and I just found out that study as a team is more effective." (PF33)

Figure 3 depicts the distribution of the students' roles in a team. The content analysis results showed that the most repeated role by the students was the leader role (f:23). These students, who see themselves as having a sense of leadership and group management ability, claimed that they would take on this role even when not assigned to do so. The second most repeated role by the students was the participant role (f:15). These students, who see themselves as part of a team, stated that they are good at fulfilling the given tasks, but their character is not suitable for process management. Some students, on the other hand, claimed that, despite their unwillingness to lead, they excel at team planning and are at the forefront when it comes to planning (f:5). The fourth role that emerged in this regard was the technical support. The students, who volunteered to meet the technical needs (f:3) of the group, stated that this activity was essential to achieving the objective. In addition to these, some

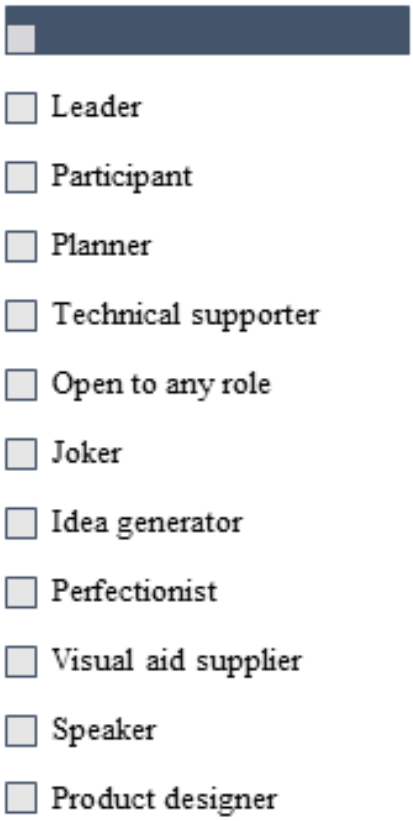

Figure 3. Students' roles in the team.
Source: Authors

students indicated that they might fulfil roles such as joker (f:1), idea generator (f:1), perfectionist (f:1), visual aid supplier (f:1), speaker (f:1) and product designer (f:1) within the group. The following are some student remarks about the factors shown in Figure 3:

"I think I do not like to be a pawn. I generally prefer to be the queen or the king like in chess." (PM1)

"Because of my personality, I generally become the leader. I give the main ideas, methods etc. After each person got their jobs, I try to finish mine effectively and immediately and then I'll help and guide each teammate personally. Also, I would never enforce my thoughts on them; I take everyone's opinion and respect them even if I don't agree." (PF8)

"I used to be the leader of my team because I like talking and communicating with everyone in my team and ı can organize the stuff. I never give up and help and courage others to do more to do the process in the best way." (PF14)

"I want to be a leader but If I am not a leader, I do not mind. When I work with a team, I try to do my best and do my responsibilities and duties in the best way. But, when I am a leader, I know all the steps done and will be done. All steps are controlled by me, so my mind is clear. I know what steps will be carried into practice or will not. Hence, I prefer being a leader." (PF32)

"My role would not be big or leadership focused but I would work hard as a regular member and the supporter of the team. I would try to understand the others' doings and their plans because I also want to keep up with them. After obtaining some information, I would probably take some of the tasks and finish them in time to make myself more comfortable." (PF57)

"When I work with a team, I and my team friends share all works equally and everyone does his or her assignments properly." (PF60)

"I am the one who reminds the others to send their voice recordings in time. So this shows that I am most likely the one that tries to keep everybody in check when I am doing a team assignment." (PF24)
"I'm probably not the one who's interested in the technological part of the assignment. I would rather be the one who makes a good planning by coming up with new ideas when drafting an assignment. And then I'll be the one guiding you through the process of preparing the assignment." (PF27)

"I am very flexible when it comes to roles so I do not have a specific role." (PM43)

"I can play on all roles in a team. I mean I could be joker for a team." (PM15)

"I prefer to make topic distribution and research. Because sometimes I find the resources that my friends found insufficient." (PF51)

"Main role. I'm a perfectionist and if my name is in that group, it must be perfect, no exceptions. Most of the time I make the entire project by myself. Even if it's a group one." (PM28)

"I like researching and preparing visual aids for presentation." (PF20)

"When I work with a team, I will most likely be an effective speaker or a teacher." (PF6)

"I generally play a part at the end. And as I am good at handmade, I play a big part in that area." (PF26)

In Figure 4, effective teacher roles are presented from the perspective of the students. Students were asked to indicate five characteristics that effective teachers should have. On the other hand, 28 effective teacher roles

Figure 4. Effective teachers' roles in the lens of students.
Source: Authors

expressed by the students were identified. Regarding the effective teacher roles, the most repeated role by the students was the role of motivator (f:18). The students believed that one of the essential roles of an effective teacher is to motivate students to learn. Furthermore, they noted that teachers who support and motivate them cognitively and emotionally both during and outside of the teaching process represent an important opportunity for them. Caring (f:17) was the second most frequently repeated teaching role by students. Students who voiced their ideas under this code emphasised that teachers who care about them play a distinct role in the education process. They also mentioned that effective teachers should be good at teaching (f: 14). Referring to the importance of instructors' professional backgrounds as well as their personal traits, the students stressed that the way to be an effective teacher is to be good at teaching. In this role, the students highlighted the significance of the approaches and strategies utilized in the educational process.

In tandem with this position, the role of being knowledgeable in the field also evolved (f: 11). Fifthly, the concept of an effective teacher has been associated with fairness (f: 10). Referring to the significance of a sense of fairness, the students responded that this condition should occur in a variety of contexts, including the course process, exams, student characteristics, and learning differences. In addition to the five roles identified most frequently by students, 23 additional successful teacher roles were listed. They were as follows: respectful (f:9), having sense of humour (f:7), understanding (f:7), helpful (f:6), kind (f:6), providing a variety of input (f:6), patient (f:5), well-prepared (f:4), friendly (f:4), having good communication skills (f:4), sincere (f:4), authoritative (f:3), good at classroom management (f:3), loving his/her job (f:3), self-confident (f:3), aware of learner differences (f:2), open-minded (f:2), problem-solving (f:2), showing empathy (f:2), tolerant (f:2), multifaceted (f:1), punctual (f:1) and social (f:1). The students, who indicated what kind of characteristics effective teachers should have in many dimensions such as relational, content knowledge, teaching knowledge, and personal characteristics through these roles, produced a descriptive map of the effective teacher. The following are some student remarks about the roles shown in Figure 4:

"The first thing I expect from my teacher is that he is respectful and does not see students in a lesser situation because of his position. The second feature is that my teacher should have a good command of the subject he is going to tell us. The more he has knowledge of the subject and the more he has developed himself, the more he contributes to me. The third feature that I expect from my teacher is that people are aware of learning differences and participate in the lesson with various materials suitable for this." (PF39)

"Being beneficial to their students in many sense, treating students equally, being helpful and good humoured" (PF13)

"My expectations from a teacher: Firstly, the teacher should be prepared for the lesson, secondly the teacher should suggest alternatives for students to express themselves instead of forcing them to certain methods, thirdly the teacher should create a respectful classroom environment where students can exchange ideas." (PF40)

"I expect my teacher to be friends with me, to really listen to me and really talk to me, to really help me if I have problems." (PM42)

"Firstly, I expect my teacher well-prepared and have great knowledge. Secondly, I expect the teacher to have respect for all of his/her students and to take care of

his/her students. Finally, the teacher encourages the students and accepts the student's mistakes." (PF10)

"The first expectation that I have of my teacher is for them to teach me new things. I want to learn new vocabulary every day. My second expectation is that I want them to be more attentive to their student's questions. For example, some teachers just give vague descriptions about how they want their assignments to be done and they do not give proper answers to their student's questions about the assignment. And if the student makes any mistake, they cut points from the student. My third expectation is that I want to have fun while I am in a classroom, so I would want my teacher to be lively, happy and cheerful during the lessons." (PF24)
"My teacher should be positive and motivate me for studying and doing something.
My teacher should make the lesson as fun as possible.
My teacher should have high field information.
My teacher should be warm in the classroom and treat every student equally.
My teacher should use lesson time well and efficiently." (PF20)
"He/she should be equipped. She should be kind and sincere. She also should know we are all equal and human being." (PF16)

"They should not be late to class, they should not miss the lesson, should contribute to us. They should be sincere. They should have creative ideas rather than boring lectures." (PF5)

The views of the students on the third and final sub-dimension of 21st century skills, namely competence, were examined by considering the themes of information, media, and technology literacy. As a result of the examination, the ways of obtaining information in today's technology age of the students were collected under six headings, and the ways of accessing information were collected under five headings. When examining the methods of gathering information, it was revealed that the browsing code (f: 47) was the most frequently used by students. The students, who believe that it is important to take advantage of this opportunity afforded by developing and changing technological conditions, stated that they can access new information as quickly as possible via the Internet, and that they only visit libraries and bookstores when absolutely necessary. In terms of information-gathering methods, the code for reviewing printed sources (f:15) was the second most frequently used by students. Under this code, the students claimed that they were unable to locate print sources online, particularly those that were out of date. Under the effect of their old practises, some students stated that they still relied on printed sources to gain new knowledge. The students also identified the code of asking individuals around (f: 11) as a means of collecting information. Students reported that they received information through this code by asking their peers, instructors, parents, and acquaintances questions. The 4th code repeated by the students was acquiring information through social media platforms (f: 7), which is closely related to the research code on the internet. It was noticed that this code has a major impact on the acquisition of information, considering the time and data flow of the students, who noted that they acquire a great deal of information here, as a result of frequently visiting social media sites. Playing games (f: 5) and watching videos (f: 4) were also mentioned by students as information-gathering methods. The students underlined that using these codes, playing online games and watching videos on internet video sharing platforms are among the means of acquiring information.

The following are some student remarks about the ways of gathering information and steps followed when gathering information in Figure 5:

"I just Google it." (PF18)

"I generally use internet for gathering information in the age of technology but of course there are some websites that I trust when I need real information like www.dergipark.com and www.googlescholar.com. But right now, in some projects I use books about the topic for gathering information." (PF44)

"When I am researching a subject, I usually use the internet, but if there is a resource or a book on the subject, I also use them." (PF54)

"I get most of the information from the internet. For example, I usually come across information that I would be surprised while surfing on Instagram." (PF9)

"In the age of technology, it is very easy to gather information. Now, thanks to Uncle Google, I can learn any information I want by searching. And I can understand it if I want, by listening, by reading, or by a teacher. At the same time, it is more catchy and fun to acquire knowledge by playing games all the time." (PF7)

"I can grasp the subject by watching various videos on a subject from a platform such as YouTube. In addition, I use applications that include various games and visual cards in order to better teach a subject that I learned through face-to-face training. For example, after watching foreign language videos on YouTube, I reinforce my knowledge from applications such as Duolingo and membrise." (PF39)

"I go to a search engine. A search engine is a website that collects and organizes information on the internet and makes it available for searching.
I type what I'm looking for into the search bar and press

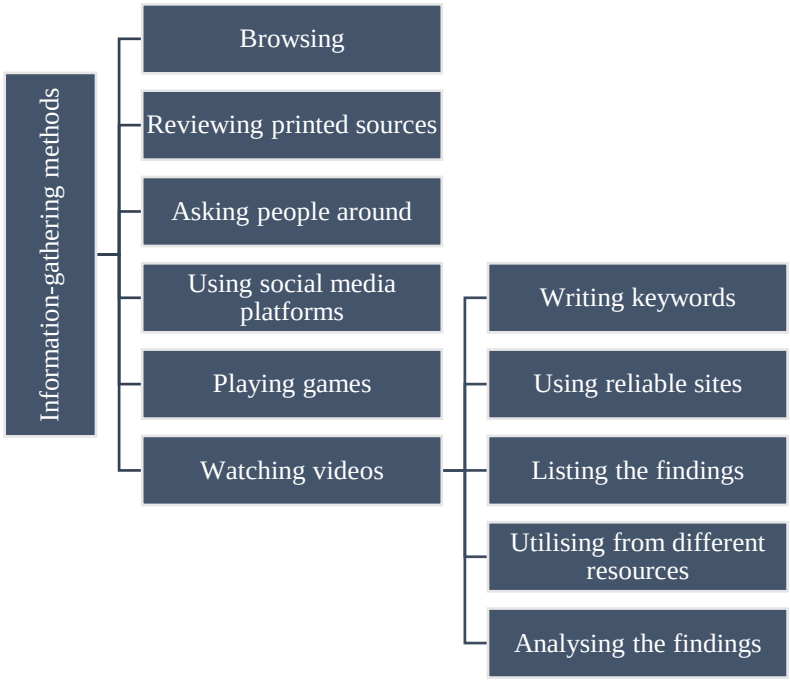

Figure 5. Information gathering and ways to access information
Source: Authors

the Enter key to run my search. I can enter a single word, a sentence, a phrase, some numbers, or anything else I wish. This displays my search results in a list.
I click or tap a result to view it. If I find a website that looks like what I want, I click or tap it to open in my browser.
I can rephrase my query for better results. If I'm not finding the right information, I might need to use different words in my search.
I can filter my results by date. The majority of search engines have some handy (but easy to miss) tools near the top of the results pages, including the ability to only show results from a certain time period.
I can filter my results by type. In general, doing a regular internet search displays a list of web links that match what I've typed. But if I just want to see photos, videos, or news articles, I can click Images, Videos, News, and sometimes other categories at the top of every search engine's results page to filter my results." (PF23)

"Firstly, I search with the keywords. Finding multiple trusted resources and emerging them together. That's how I do." (PF19)

"First I find the subject I want to research, then I do my first research about it, I group the information I find and then I try to reach the right information. Because there is a lot of misleading information on the internet" (PF9)

"As I just mentioned, I get help from reliable sites to get rid of any information pollution on the internet. Sites recommended by my teacher are priority for me. The books we use in the lesson are the same. If I'm doing homework, I start with these two first. Then I use approved articles on the internet for more detailed information. I complete my homework by taking notes of my thoughts with the information I read." (PF3)

"As I said, I will use a safe browser such as Google Scholar, and then I will narrow the time and many other categories by selecting. Now, the only thing remains is to further analyse the articles and reach a conclusion." (PM2)

"I try to find most reliable sources. I check couple of sources and see if they're similar or so. Therefore, it shows that it is reliable." (PM28)

In recent years, there has been a growing recognition of the need for 21st century skills, such as critical thinking, creativity, and collaboration, in addition to traditional academic knowledge. In response, many education systems have shifted their focus towards incorporating these skills into their learning environments. This qualitative study aimed to explore the perceptions of ELT (ELT) students on 21st century skills and the learning environments that support their development. The findings of the study suggest that ELT students view 21st century skills as important for their future success and are aware of the need for them to be developed in the

classroom. However, the students also expressed that traditional teaching methods do not always support the development of these skills, and that there is a need for a shift towards more interactive and student-centered learning environments. This highlights the importance of promoting a culture of lifelong learning, where students are encouraged to take an active role in their own development and are provided with the necessary tools and resources to do so. Additionally, the study found that technology plays a crucial role in the development of 21st century skills. The use of technology in the classroom was seen as an effective way to support student engagement, creativity, and collaboration, as well as providing access to a wealth of information and resources. This underlines the need for schools to invest in technology and to provide training for teachers to effectively integrate it into their teaching practices. The results of this study emphasize the importance of creating learning environments that support the development of 21st century skills. By incorporating student-centered approaches, technology, and a culture of lifelong learning, education systems can ensure that students are equipped with the skills necessary for success in a rapidly changing world. It is hoped that this research will inform policymakers and educators about the needs and perspectives of ELT students and serve as a call to action for creating more effective learning environments.

PEDAGOGICAL IMPLICATIONS

The contemporary era has seen numerous technological, communicative, and global developments and transformations that have had a significant impact on the pedagogy and acquisition of English as a Foreign Language (EFL). Consequently, there is an increasing necessity to cultivate and execute skills pertinent to the 21st century within the realm of EFL instruction. The acquisition of critical thinking and problem-solving skills, which are essential for success in the contemporary era, can be facilitated by EFL instructors through the integration of activities that prompt learners to engage in critical analysis of real-life issues. One possible approach to engage students in critical thinking and discussion is to assign them to work collaboratively in groups, with the task of analysing a recent news article or debating a current event. The utilisation of English language in discussing and analysing a topic not only fosters the development of critical thinking skills among students, but also enhances their language proficiency. The ability to collaborate is deemed a crucial skill in the 21st century. The cultivation of collaborative skills among students in the EFL context can be facilitated by the active encouragement of teachers to engage them in group-based projects and activities. As an illustration, pupils have the option to collaborate in compact teams to generate a presentation or accomplish an assignment. Collaborative learning not only fosters the development of students' teamwork abilities but also augments their linguistic aptitude as they utilise English to interact and cooperate with one another. Conversely, creativity constitutes a crucial facet of contemporary competencies and is increasingly valued in the global labour market. To foster creativity among EFL learners, educators can integrate instructional strategies that promote the opportunity for students to articulate their thoughts and ideas in novel and imaginative manners. For instance, students can be encouraged to write a piece of poetry, craft a short narrative, or create a visual representation. Engaging in creative activities not only facilitates the development of students' creativity, but also their language proficiency as they utilize the English language to articulate their thoughts and concepts. To summarise, fostering the acquisition of 21st century skills within the context of English as a Foreign Language (EFL) instruction is essential for students to succeed in the international job market. The cultivation of critical thinking, problem-solving, collaboration, creativity, and effective communication skills can be facilitated by EFL instructors through the integration of activities that promote these competencies. Through this approach, learners will not only cultivate these essential skills but also augment their linguistic proficiency by employing English in authentic contexts.

CONCLUSION

Herewith, the analysis of 21st century skills and learning environments highlights the importance of preparing ELT (English Language Teaching) students for success in the 21st century. The findings of this study indicate that ELT students perceive critical thinking, problem-solving, collaboration, creativity, and effective communication as essential 21st century skills. They also believe that these skills can be developed through engaging and dynamic learning environments that incorporate technology, project-based learning, and real-world applications. The results of this study suggest that ELT students value learning environments that provide opportunities for hands-on and collaborative experiences. They believe that technology can enhance learning by providing access to resources, facilitating communication, and allowing for real-world applications of language skills. Furthermore, students see project-based learning as a valuable method for developing 21st century skills as it allows hands-on experiences, collaboration, and the application of language skills to real-world problems. It can be deduced from this study that 21st century skills have important implications for ELT educators and curriculum developers. Educators should strive to create learning environments that are engaging and dynamic, incorporating technology and project-based learning to provide opportunities for students to develop 21st-century

skills such as critical thinking, problem-solving, collaboration, creativity, and effective communication. By doing so, ELT students will be better equipped to succeed in the 21st century, both in their academic and professional pursuits. Additionally, curriculum developers should consider the findings of this study when designing ELT curricula. They should strive to incorporate 21st century skills and engaging, dynamic learning environments into the curriculum, so that ELT students are well-prepared for success in the 21st century. Furthermore, they should also consider the importance of technology and project-based learning in developing 21st century skills. Consequently, the analysis of 21st century skills and learning environments highlights the importance of preparing ELT students for success in the 21st century. ELT students perceive critical thinking, problem-solving, collaboration, creativity, and effective communication as essential 21st century skills that can be developed through engaging and dynamic learning environments that incorporate technology and project-based learning. Therefore, incorporating these findings into ELT education can better equip students to succeed in the 21st century.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

Al-Mahrooqi R (2012). "English Communication Skills: How Are They Taught at Schools and Universities in Oman?" English Language Teaching 5(4):124-130

Ananiadou K, Claro M (2009). 21st century skills and competences for new millennium learners in oecd countries. Paris: OECD Education Working Papers.

Applied Educational Systems (2019). What are the 4C's of 21st century skills? Retrieved from https://www.aeseducation.com/career-readiness/what-are-the-4-cs-of-21st-century-skills

Berger G (2016). Data reveals the most in-demand soft skills among candidates. https://business.linkedin.com/talent-solutions/blog/trends-and-research/2016/most-indemand-soft-skills.

Bulus M, Atan A, Sarıkaya HE (2017). Effective communication skills: A new conceptual framework and scale development study. International Online Journal of Educational Sciences 9(2):575-590.

Center for Curriculum Redesign. (2015). Skills for the 21st century: What should students learn? Retrieved from https://curriculumredesign.org/wp-content/uploads/CCR-Skills_FINAL_June2015.pdf

Davila S (2016). 21st century skills and the English language classroom. Retrieved from https://www.english.com/blog/21st-century-skills/

Doleck T, Bazelais P, Lemay DJ, Saxena A, Basnet RB (2017). Algorithmic thinking, cooperativity, creativity, critical thinking, and problem solving: Exploring the relationship between computational thinking skills and academic performance. Journal of Computers in Education 4(4):355-369.

Eaton SE (2010). Global Trends in language learning in the twenty-first century. Calgary: Onate Press.

Erdogan V (2019). Integrating 4C Skills of 21st Century into 4 Language Skills in EFL Classes: International Journal of Education and Research 7(11):113-124.

Eshet-Alkalai Y (2004). Digital literacy: A conceptual framework for survival skills in the digital era. Journal of Educational Multimedia and Hypermedia 13(1):93-106.

Fandino YJ (2013). 21st century skills and the English foreign language classroom: A call for more awareness in Colombia. Gist Education and Learning Research Journal 7:190-208.

Geisinger KF (2016). 21st Century skills: What are they and how do we assess them? Applied Measurement in Education 29(4):245-249.

Gkemisi S, Paraskeva F, Alexiou A, Bouta H (2016). Strengthening collaboration and communication skills in an online TPD program for 21st-century educators. International Journal of Learning Technology 11(4):340-363.

Guo J, Woulfin S (2016). Twenty-first century creativity: An investigation of how the Partnership for 21st Century Instructional Framework reflects the principles of creativity. Roeper Review 38(3):153-161.

Halverson A (2018). 21st century skills and the "4Cs" in the English language classroom. Retrieved from http://hdl.handle.net/1794/23598

Herrmann E (2015). The 4 C's of 21st century learning for ELLs: Critical thinking. Retrieved from http://exclusive.multibriefs.com/content/the-4-cs-of-21st-century-learning-for-ells-critical-thinking/education

Seng HG, Muhamad M, Richard K (2020). Integration of 21st Century Learning Skills and Teacher Characteristics in ESL Classrooms: The Case of Malaysia: Universal Journal of Educational Research 8(12A):7561-7566.

Irgatoglu A, Pakkan G (2020). The awareness of ELL students about their 21st century skills? Journal of Language and Linguistic Studies 16(4):1921-1938.

Irgatoğlu A (2021). Existing ICT Environment in EFL Classes and EFL Instructors' Use of ICT. Başkent University Journal of Education 8(1):117-128

Irgatoğlu A, Sarıçoban A, Özcan M, Dağbaşı G (2022). Learner Autonomy and Learning Strategy Use before and during the COVID-19 Pandemic. Sustainability 14:6118.

Kaufman JK (2013). 21 Ways to 21st century skills: Why students need them and ideas for practical implementation. Kappa Delta Pi Record 49(2):78-83.

Kivunja C (2015). Exploring the pedagogical meaning and implications of the 4Cs "Super Skills" for the 21st century through Bruner's 5E lenses of knowledge construction to improve pedagogies of the new learning paradigm. Creative Education 6:224-239.

Kocak O, Coban M, Aydin A, Cakmak N (2021). The mediating role of critical thinking and cooperativity in the 21st century skills of higher education students: Thinking Skills and Creativity 42(2021):100967

Lai ER (2011). Collaboration: A literature review. Boston: Pearson.

Ledward BC, Hirata D (2011). An overview of 21st century skills. Summary of 21st century skills for students and teachers. Honolulu: Kamehameha Schools–Research and Evaluation

Lewin C, Mcnicol S (2015). Supportingthedevelopment of 21st centuryskillsthrough ICT. KEYCIT 2014: Keycompetencies in informatics and ict pp. 181-198.

Maley A, Bolitho R (2015). Creativity. ELT Journal 69(4):434-436. Retrieved from https://doi.org/10.1093/elt/ccv036

Marbach-Ad G, Hunt C, Thompson KV (2019). Exploring the values undergraduate students attribute to cross-disciplinary skills needed for the workplace: An analysis of five STEM disciplines. Journal of Science Education and Technology 28(5):452-469.

National Education Association (2015). Preparing 21st century students for a global society: An educator's guide to the "Four Cs". Retrieved from http://www.nea.org/assets/docs/A-Guide-to-Four-Cs.pdf

Neubert JC, Mainert J, Kretzschmar A, Greiff S (2015). The assessment of 21st century skills in industrial and organizational psychology: Complex and collaborative problem solving. Industrial and Organizational Psychology 8(2):238-268.

Palmer T (2015). 15 Characteristics of a 21st-Century teacher. Retrieved from https://www.edutopia.org/discussion/15-characteristics-21st-century-teacher

Partnership for 21st Century Skills [P21] (2009). Framework for 21st century learning. In P21 partnership for 21st century learning. http://www.p21.org/our-work/ p21-framework.

Partnership for 21st Century Skills [P21] (2015). Framework for 21st century learning. In P21 partnership for 21st century learning. http://www.p21.org/our-work/ p21-framework.

Rahmadani CL, Fitrawati F, Syarif H (2019). EFL learners' perception

toward the use of interactive e-book in grammar class. Asian Journal of English Language and Pedagogy 7(2):18-30.
Read C (2015). Seven pillars of creativity in primary ELT. Creativity in the English language classroom pp. 29-36.
Roberts R (2016). 21st century skills. Retrieved from https://www.teachingenglish.org.uk/blogs/rachaelroberts/ rachael-roberts-21st-century-skills
Taylor F (2009). Authentic internet in the EFL class. Modern English Teacher 18(1):5-9.
Trilling B, Fadel C (2009). 21st centuryskills: Learning for life in ourtimes. San Francisco: John Wileyand Sons.
University of Sydney (2014). Learning to learn: Developing critical thinking skills. Orientation Lecture Series Retrieved from. http://sydney.edu.au/stuserv/documents/learning_centre/critical.pdf
Oxford University Press ELT (2013). 5 Ways to prepare your students for the 21st century. Retrieved from https://oupeltglobalblog.com/2013/10/09/5-ways-to-prepare-your-students-for-the-21st-century/
Voogt J, Roblin NP (2010). 21st Century Skills: Discussion paper. University of Twente. http://hdl.voced.edu.au/10707/254371.

Vol. 18(6), pp. 129-139, June 2023
DOI: 10.5897/ERR2023.4333
Article Number: 0E7A5B370758
ISSN: 1990-3839

http://www.academicjournals.org/ERR

ACADEMIC JOURNALS
expand your knowledge

Educational Research and Reviews

Full Length Research Paper

Effect of college students' perceived authentic leadership on innovation behavior: The serial mediation effects of trust climate and creative self-efficacy

Zhen-Lei Xiao and Jian-Hao Huang*

Chinese International College, Dhurakij Pundit University, Bankok, Thailand.

Received 24 April, 2023; Accepted 26 May, 2023

This study investigated the relationship between the perceived authentic leadership of college students and their innovation behavior according to social cognitive theory and further explored the mediating effect of trust climate and creative self-efficacy on this relationship. A questionnaire survey was conducted, and more than 847 samples were collected from college students in China. The results revealed that the perceived authentic leadership of college students had a significant and positive impact on their innovation behavior. Trust climate had a partial mediating effect on the relationship between college students' perceived authentic leadership and innovation behavior. In addition, creative self-efficacy had a partial mediating effect on the relationship between college students' perceived authentic leadership and innovation behavior. Furthermore, trust climate and creative self-efficacy had a serial mediating effect on the relationship between college students' perceived authentic leadership and innovation behavior. These results provide theoretical and practical evidence of college students' innovation behavior.

Key words: Authentic leadership, trust climate, creative self-efficacy, innovation behavior, college students.

INTRODUCTION

Innovation behavior is a crucial skill that enterprises require from college graduates (Zhao et al., 2022), and it refers to the actions and activities that individuals undertake to propose and promote new perspectives and concepts that can lead to novel solutions to problems (Selznick et al., 2022). Innovation behavior not only influences individual activities but also contributes to economic growth and competitiveness among nations (Bock et al., 2020; Chen et al., 2022). Shi et al. (2023) claimed that innovation behavior is the fundamental skill that contemporary college students should possess. Cultivation of innovation behavior in college students has become the core goal of higher education in many countries globally. Extensive studies on innovation behavior have been conducted; in particular, those on college students' innovation behavior have attracted considerable attention in the higher education field (Alt et al., 2023; Dai et al., 2022; Kim and Koh, 2018).

*Corresponding author. E-mail: Jianhao.hua@dpu.ac.th.

Authentic leadership as an active leadership method has been found to be a crucial predictive factor of employees' innovation behavior (Claudia et al., 2012; Gardner et al., 2011; Shang et al., 2019). Educational research has indicated that teachers' authentic leadership is a key predictive factor of college students' innovation behavior (Greenier and Whitehead, 2016) and refers to a method in which teachers use authentic, transparent, and ethical behavior to lead students (Kleynhans et al., 2021). Teachers' authentic leadership can promote students' innovation behavior through incentive and authorization methods by expanding students' thinking and encouraging them to implement their ideas (Schuckert et al., 2018; Srivastava and Dhar, 2019).

Studies have reported that trust climate and creative self-efficacy help students to actively respond to challenges during the learning process and enhance their confidence in achieving the goal; thus, these two factors are crucial to students' innovation behavior (Chen et al., 2022; Kistyanto et al., 2022). Studies have indicated that teachers' authentic leadership significantly and positively influenced the trust climate and creative self-efficacy of students (Butler-Henderson and Crawford, 2020; Lee et al., 2022). In addition, Clegg et al. (2002) verified that a favorable trust climate enhances teacher–student exchanges and collaborations, thereby boosting students' creative self-efficacy. The present study explored the serial mediating role of two key factors, namely trust climate and self-efficacy, in the relationship between college students' perceived authentic leadership and innovation behavior.

Based on social cognitive theory and the interaction among individuals, the environment, and behavior (Bandura, 1986), the present study considered college students' perceived authentic leadership and trust climate as environmental factors, creative self-efficacy as an individual factor, and innovation behavior as a behavioral factor and explored the relationship among the four variables. Specifically, the present study explored the effect of college students' perceived authentic leadership on their innovation behavior and the single and serial mediation effects of trust climate and creative self-efficacy on the effect of college students' perceived authentic leadership on their innovation behavior.

LITERATURE REVIEW AND RESEARCH HYPOTHESES

College students' perceived authentic leadership and innovation behavior

Authentic leadership refers to a leadership behavior that is inspired by positive psychological capacities and a positive ethical climate (Walumbwa et al., 2008). Walumbwa et al. (2008) reported that authentic leadership comprises four dimensions, namely self-awareness, relational transparency, internalized moral perspective, and balanced processing.

Self-awareness refers to how clearly a leader knows how to influence others. Relational transparency refers to the demonstration of the true self of the leader without disguise. Internalized moral perspective refers to the consistency of the leader's behavior to their values. Balanced processing refers to the ability of the leader to listen to different opinions and objectively analyze various types of information (Walumbwa et al., 2010). In addition, Rego et al. (2012) indicated that authentic leaders can efficiently establish authentic relationships with employees by enhancing the employees' acceptance of the leaders' core values and moral sense, which, in turn, boosts the performance and innovation levels of the employees. Extensive studies on the relationship between authentic leadership and innovation behavior in the organization and management fields have been conducted. Bamford et al. (2013) indicated that authentic leadership is a key factor that promotes individual innovation behavior. Specifically, the self-awareness and self-regulation of an authentic leader influence employees' attitude and behavior, thereby affecting employees' innovation behavior (Gardner et al., 2011). Empirical studies have reported that authentic leadership significantly and positively influenced employee innovation behavior (Claudia et al., 2012; Shang et al., 2019; Yamak and Eyupoglu, 2021).

Butler-Henderson and Crawford (2020) reported that authentic leadership plays a crucial role in educational systems. The application of the authentic leadership model in educational systems enables teachers to guide students' growth and development through active behavior. Kleynhans et al. (2021) defined teachers' authentic leadership as a method by which teachers can use authentic, transparent, and moral behavior to lead students. Teachers' authentic leadership can help model high moral standards in students and encourage them to express innovative ideas more efficiently, which can lead to improved behavioral performance among students (Alruz et al., 2020; Peus et al., 2012). Previous empirical studies have explored the relationship between teachers' authentic leadership and innovation behavior. For example, Greenier and Whitehead (2016) identified that teachers' authentic leadership can enhance students' active participation and innovation behavior through teachers' consistent expression of self-values and authentic self. In addition, authentic leadership enables teachers to seek suggestions from students and encourage students to propose their creative ideas, thereby enhancing students' innovation behavior (Schuckert et al., 2018; Srivastava and Dhar, 2019).

Thus, the present study proposed Hypothesis 1 (H1) as follows:

H1: College students' perceived authentic leadership significantly and positively affects innovation behavior.

College students' perceived authentic leadership, trust climate, and innovation behavior

Trust climate is a unique organizational climate (Costigan et al., 1998) that reflects an individual's comprehensive assessment of trust in the internal environment of their affiliated organization (Patterson et al., 2004). Berraies et al. (2014) indicated that trust climate is a crucial factor that affects innovation behavior. A favorable climate trust can effectively increase employees' cooperation levels and work enthusiasm, thereby promoting innovation behavior among the employees (Hoang et al., 2022; Mou et al., 2021). In the educational context, climate trust provides conditions conducive to innovation and is critical to student innovation (Kistyanto et al., 2022). Trust climate can also encourage students to actively seek feedback, learn skills and acquire knowledge, seek efficient learning methods, and increase their innovation behavior (Greenier and Whitehead, 2016). Moreover, students are encouraged to exchange their ideas and share knowledge with other students and motivate each other, which contribute to innovation behavior (Algera and Lips-Wiersma, 2012). Leighton et al. (2016) identified that a favorable trust climate can increase college students' innovation behavior.

Empirical studies have demonstrated that teachers' authentic leadership significantly and positively influenced Trust climate (Kulophas et al., 2015; Wiewiora and Kowalkiewicz, 2018; Wu and Xu, 2022). Authentic teachers express their authentic emotions, which increases the relational transparency between teachers and students, thereby enhancing trust climate (Park and Kim, 2021; Walumbwa et al., 2008). In addition, previous empirical studies on innovation behavior have often used trust climate as a mediating variable (Pachler et al., 2019; Wang, 2019). Therefore, college students' perceived authentic leadership positively affects trust climate, which increases college students' innovation behavior. Thus, the present study proposed Hypothesis 2 (H2) as follows:

H2: Trust climate has a mediating effect on the effect of college students' perceived authentic leadership on their innovation behavior.

College students' perceived authentic leadership, creative self-efficacy, and innovation behavior

Bandura (1977) first proposed the concept of self-efficacy and defined it as the level of confidence people have in themselves to complete a given work with the skills they possess. Creative self-efficacy is an extension of self-efficacy in the creativity domain and is defined as the confidence of a person in obtaining creative outcomes in innovation activities (Tierney and Farmer, 2002). Teng et al. (2020) stated that creative self-efficacy is the internal driving force of individual innovation and has a positive effect on individuals' innovation behavior. Javed et al. (2021) verified that creative self-efficacy significantly and positively affected employee innovation behavior. A study indicated that students' creative self-efficacy is a crucial factor that affects their innovation behavior (Lemonsa, 2010). The implementation of innovation behavior involves numerous challenges. The confidence among students as a result of their creative self-efficacy enables them to believe that they are capable of facing the difficulties and challenges during the innovation process (Afsar and Masood, 2017). Moreover, students with high creative self-efficacy are adept in learning new skills and acquiring knowledge and thus more actively engage in innovation behavior (Hirst et al., 2015). An empirical study on college students indicated that their creative self-efficacy promoted their innovation behavior (Chen et al., 2022).

Teachers' authentic leadership is an antecedent variable that affects students' creative self-efficacy (Kulophas et al., 2015). Because it encourages students to make decisions independently and provides them more space to improve their skills and confidence in performing creative activities, thereby increasing their creative self-efficacy (Alruz et al., 2020; Purwanto et al., 2021). Empirical studies have indicated that teachers' authentic leadership significantly increased college students' creative self-efficacy (Rego et al., 2012; Srivastava and Dhar, 2019; Srivastava et al., 2022). Moreover, studies have indicated that creative self-efficacy has a mediating effect on the relationship between the teachers' leadership style and innovation behavior (Gu et al., 2017; Lei et al., 2021; Wang et al., 2022). The present study infers that college students' perceived authentic leadership has a positive effect on their creative self-efficacy, thereby promoting their innovation behavior. Thus, this study proposed Hypothesis 3 (H3) as follows:

H3: Creative self-efficacy has a mediating effect on the effect of college students' perceived authentic leadership on their innovation behavior.

College students' perceived authentic leadership, trust climate, creative self-efficacy, and innovation behavior

According to the literature review, although trust climate and creative self-efficacy have a single mediating effect on the relationship between teachers' authentic leadership and innovation behavior, whether they have a serial mediating effect requires further exploration. Authentic leadership enables teachers to demonstrate their authentic self to students through self-awareness and attitude and behavior toward students, establish trust relationships with students, and build a favorable trust climate (Kleynhans et al., 2021). A favorable trust climate

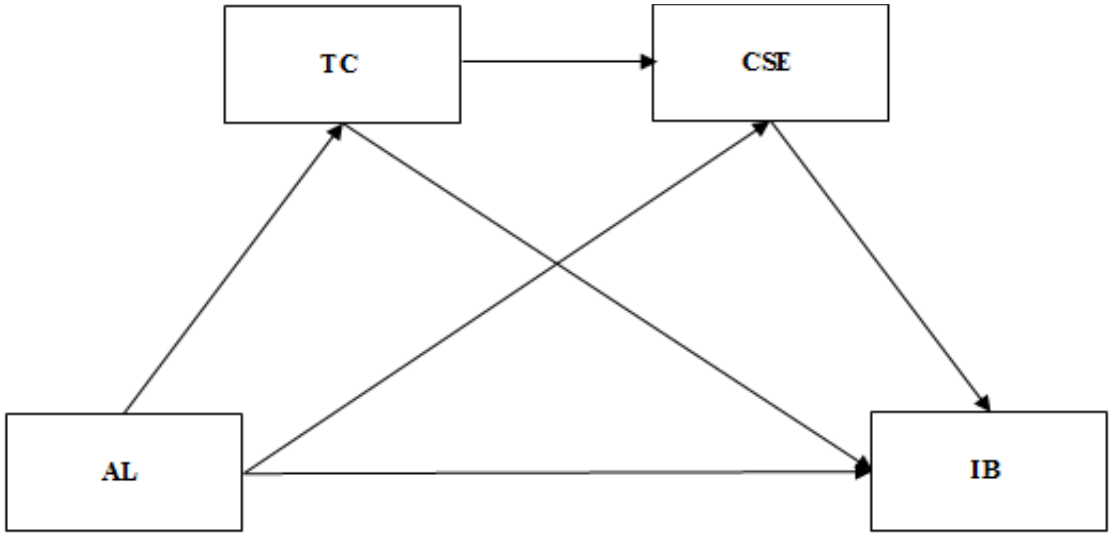

Figure 1. Research framework. AL=authentic leadership; TC=trust climate; CSE= creative self-efficacy; IB= Innovation behavior.
Source: Authors.

promotes intensive and extensive cooperation and exchange among students, helps them acquire inspiration and develop creativity in solving problems, and increases their creative self-efficacy (Greenier and Whitehead, 2016). In addition, a favorable trust climate enhances students' confidence and enables them to develop positive thinking and actively participate in creative activities, thereby strengthening the students' creative self-belief (Isaksen, 2010; Zhou and George, 2003). These findings suggest trust climate increases students' creative self-efficacy. Moreover, Lee et al. (2022) verified that trust climate is a key variable affecting creative self-efficacy. In summary, we infer that college students' perceived authentic leadership affects the trust climate, which increases their creative self-efficacy, and eventually promotes their innovation behavior. Thus, the present study proposed Hypothesis 4 (H4):

H4: Trust climate and creative self-efficacy have a serial mediating effect on the effect of college students' perceived authentic leadership on their innovation behavior.

In summary, although studies in the education field have reported that college students' perceived authentic leadership has a positive effect on their innovation behavior, the mechanism underlying this effect requires further exploration. Thus, the present study used social cognitive theory as the basis and trust climate and creative self-efficacy as the mediating variables to identify the mechanism underlying the effect of college students' perceived authentic leadership on their innovation behavior. The research framework is presented in Figure 1.

RESEARCH METHOD

Participants

With the aim of promoting the local economic and social development, the colleges of Hebei have integrated industry and education by facilitating the cooperation between schools and enterprises for inculcating innovation ability among students. Until now, a total of 42 universities in Hebei have been selected as national representative Colleges for deepening the innovation education reform (Sun et al., 2020). Therefore, college students in Hebei can serve as representative samples for exploring college students' innovative behavior and the influencing factors. In the present study, pilot test and formal test questionnaire survey were conducted. In the pilot test data, a total of 170 questionnaires were distributed, and after excluding invalid questionnaires, 154 questionnaires were obtained, with an effective recovery rate of 90.6%. The formal test data were determined using the purposive sampling and convenience sampling methods. Colleges in Hebei were divided into three levels: Vocational and technical colleges; General Colleges; and Double First-Class Colleges. First, purposive sampling was used to select two "national demonstration universities for deepening innovative education reform" from each of the three levels of universities. The performance of these six universities in innovative education of college students has been excellent, and students in these universities are often characterized by high innovative behavior. Second, using the convenience sampling method, a questionnaire survey of college students was conducted in these six representative universities. A total of 961 questionnaires were sent out, and after excluding invalid questionnaires, 847 questionnaires were obtained, with an effective recovery rate of 88.2%. Table 1 shows the demographic information of participants.

Measures

The study adopted an authentic leadership scale, a trust climate scale, a creative self-efficacy scale, and an innovation behavior scale for measurement. Since the measurement tools for this study

Table 1. Demographic information of the participants.

Demographic	Category	Frequency	%
Gender	Male	411	48.5
	Female	436	48.5
Grade	Freshman	221	26.1
	Sophomore	222	26.2
	Junior	215	25.4
	Senior	189	22.3

Source: Authors

are the Authentic Leadership Scale, and the Trust Climate Scale, which were all developed by past researchers and written in English, they need to be translated into Chinese because the participants in this study are all Chinese college students. Generally, a proper translation procedure is required to secure implication equivalency between the source and target languages. Therefore, this study adopted the back-translation technique (Brislin, 1970). A bilingual scholar who speaks both English and Chinese and who is academically accustomed to the research topic translated the instrument into Chinese. Meanwhile, another bilingual scholar translated it back into English again. The original and back-translated versions were compared to identify differences and check for comparability. This study repeated this procedure until there was no meaning difference. The scales used are described in detail in the following:

Authentic leadership scale

The current study adopted the authentic leadership scale developed by Walumbwa et al. (2008) for assessing authentic leadership. The scale comprises of 16 items distributed across four dimensions, namely self-awareness, relational transparency, internalized moral perspective, and balanced processing. The scale was originally designed to measure the authentic leadership of enterprise employees. The present study modified the items in the original scale to be suitable for use in the educational context. Examples of the items are “My teacher knows clearly how his/her behavior affects others” (self-awareness), “My teacher encourages everyone to express their ideas” (relational transparency), “My teacher expresses faith consistent to behavior” (internalized moral perspective), and “My teacher seeks perspectives different from his/hers” (balanced processing). The items in the scale were scored on a 5-point Likert scale from 1 (*totally disagree*) to 5 (*totally agree*), with higher scores indicating a higher college students’ perception of their teachers’ authentic leadership. The pilot test data showed that the critical ratios of all items were greater than 3, and the correlation coefficient between each item and the total score were greater than 0.4. Cronbach's α did not increase after deleting items, which met the criteria for item retention. Hence, no item was deleted. The exploratory factor analysis showed that the factor loading of each item ranged from 0.512 to 0.773, with the cumulative explained variance in total being 79.800%. In formal test data, Cronbach’s α for the four dimensions was 0.919, 0.933, 0.924, and 0.8850. Cronbach’s α for the overall scale was 0.951. All Cronbach’s α values were higher than 0.7, indicating favorable reliability (Nunnally, 1978).

The confirmatory factor analysis results were as follows: χ^2/df = 3.946, RMSEA = 0.059, SRMR = 0.028, CFI = 0.976, NFI = 0.968, GFI = 0.946 and TLI = 0.970. The results suggested that the model fit was satisfactory (Hsiao et al., 2016).

Trust climate scale

The present study adopted a trust climate scale developed by Mcallister (1995) for assessing trust among students. The scale comprises of 11 items distributed across two dimensions, namely affective trust and cognitive trust. The scale was originally designed for use in enterprise employees. The present study modified the items in the original scale to be suitable for use in the educational context. Examples of the items include “I can freely share my ideas, feelings, and hope with the teacher and classmates” (affective trust) and “The teacher’s and classmates’ behavior conform to my expectation” (cognitive trust). The items were scored on a 5-point Likert scale from 1 (*totally disagree*) to 5 (*totally agree*), with higher scores representing a more favorable trust climate. The pilot test data showed that the critical ratios of all items were greater than 3, and the correlation coefficient between each item and the total score were greater than 0.4. Cronbach's α did not increase after deleting items, which met the criteria for item retention. Hence, no item was deleted. The exploratory factor analysis showed that the factor loading of each item ranged from 0.569 to 0.852, with the cumulative explained variance in total being 63.349%. In formal test data, Cronbach’s α for the two dimensions was 0.883 and 0.938. Cronbach’s α for the overall scale was 0.931. All Cronbach’s α values were higher than 0.7, indicating favorable reliability. The confirmatory factor analysis results were as follows: χ^2/df = 10.614, RMSEA = 0.072, SRMR = 0.048, CFI = 0.943, NFI = 0.937, GFI = 0.902 and TLI = 0.927. The results suggested that the model fit was satisfactory.

Creative self-efficacy scale

This study adopted the creative self-efficacy scale developed by Yu (2018), which comprises 10 items distributed across two dimensions, namely problem solving ability and innovation ability. Examples of the items include “When I meet a difficult problem, I believe I can try a new way to solve it” (problem solving ability) and “Even if my colleagues do not encourage innovative ideas, I still think about problems and find different solutions” (innovation ability). The items in the scale were scored on a 5-point Likert scale from 1 (*totally disagree*) to 5 (*totally agree*), with higher scores indicating higher creative self-efficacy of the college student. The pilot test data showed that the critical ratios of all items were greater than 3, and the correlation coefficient between each item and the total score were greater than 0.4. Cronbach's α did not increase after deleting items, which met the criteria for item retention. Hence, no item was deleted. The exploratory factor analysis showed that the factor loading of each item ranged from 0.570 to 0.881, with the cumulative explained variance in total being 74.246%. In formal test data, Cronbach’s α for the two dimensions was 0.922 and 0.936. Cronbach’s α for the overall scale was 0.942. All Cronbach’s α

Table 2. Correlation coefficients, means and standard deviations of variables.

Variable	AL1	AL2	AL3	AL4	TC1	TC2	CSE1	CSE2	IB1	IB2	IB3	IB4
AL1	1											
AL2	0.67***	1										
AL3	0.58***	0.70***	1									
AL4	0.60***	0.65***	0.66***	1								
TC1	0.48***	0.52***	0.47***	0.52***	1							
TC2	0.54***	058***	0.53***	0.53***	0.64***	1						
CSE1	0.46***	0.49***	0.44***	0.45***	0.52***	0.46***	1					
CSE2	0.46***	0.50***	0.45***	0.47***	0.49***	0.44***	0.67***	1				
IB1	0.50***	0.57***	0.50***	0.53***	0.53***	0.54***	0.50***	0.51***	1			
IB2	0.49***	0.53***	0.46***	0.49***	0.51***	0.46***	0.50***	0.59***	0.55***	1		
IB3	0.48***	0.52***	0.48***	0.50***	0.52***	0.50***	0.50***	0.59***	0.53***	0.65***	1	
IB4	0.47***	0.53***	0.50***	0.50***	0.52***	0.50***	0.49***	0.52***	0.59***	0.67***	0.69***	1
M	4.02	4.31	4.19	4.18	4.14	4.37	4.06	3.90	4.00	3.76	3.93	4.05
SD	4.31	0.75	0.81	0.79	0.76	0.70	0.77	0.78	0.88	0.89	0.80	0.78

AL=authentic leadership; TC=trust climate; CSE=creative self-efficacy; IB=innovation behavior; AL1= self-awareness; AL2=relational transparency; AL3=internalized moral perspective; AL4=balanced processing; TC1= affect-based trust; TC2=cognition-based trust; CSE1=problem solving ability; CSE2=innovation ability; IB1= modes of thinking; IB2=academic exploration; IB3=life practice; IB4=academic study; ***$p<0.001$.

Source: Authors.

values were higher than 0.7, indicating favorable reliability. The confirmatory factor analysis results were as follows: χ^2/df = 10.007, RMSEA = 0.075, SRMR = 0.057, CFI = 0.951, NFI = 0.946, GFI = 0.915 and TLI = 0.938. The results suggested that the model fit was satisfactory.

Innovation behavior scale

This study adopted the innovation behavior scale developed by Li et al. (2019), which comprises 17 items across four dimensions, namely modes of thinking, academic exploration, life practice, and academic study. Examples of the items include “I can propose opinions different from traditional ideas and concepts” (modes of thinking), “I can engage in creative learning” (academic exploration), “I can discover problems that need to be solved in life” (life practice), and “I have strong curiosity about new knowledge” (academic study). The items in the scale were scored on a 5-point Likert scale from 1 (*totally disagree*) to 5 (*totally agree*), with higher scores indicating stronger innovation behavior of the college student. The pilot test data showed that the critical ratios of all items were greater than 3, and the correlation coefficient between each item and the total score were greater than 0.4. Cronbach's α did not increase after deleting items, which met the criteria for item retention. Hence, no item was deleted. The exploratory factor analysis showed that the factor loading of each item ranged from 0.531 to 0.834, with the cumulative explained variance in total being 73.569%. In formal test data, Cronbach’s α for the four dimensions was 0.945, 0.895, 0.869, and 0.873. Cronbach’s α for the overall scale was 0.947. All Cronbach’s α values were higher than 0.7, indicating favorable reliability. The results of the confirmatory factor analysis were as follows: χ^2/df = 8.744, RMSEA = 0.069, SRMR = 0.049, CFI = 0.927, NFI = 0.919, GFI = 0.902 and TLI = 0.912. The results suggested that the model fit was satisfactory.

Common method variance

This study adopted the Harman single factor testing method for common method variance testing. A total of 12 factors with an eigenvalue >1 were obtained and the first factor variance explained was 35.995%, lower than 40%. The result indicated that the data had no severe common method variance problem (Harris et al., 2009).

Data analysis

The reliability test, descriptive statistical analysis, and correlation analysis of variables were performed using SPSS. Analysis of moment structures was conducted to perform confirmatory factor analysis. Latent variable structural equation modeling was adopted to evaluate the mediating effects.

RESULTS

Correlations and descriptive statistics

This study conducted descriptive statistical analysis and correlation analysis of the variables in all the dimensions, and the results are presented in Table 2. The four dimensions of authentic leadership (self-awareness, relational transparency, internalized moral morality, and balanced processing), the two dimensions of trust atmosphere (affect-based trust and cognition-based trust), and the two dimensions of innovative self-efficacy (problem solving ability and innovation ability) exhibited a significant positive correlation with the four dimensions of innovative behavior (modes of thinking, academic exploration, life practice, and academic study), with correlation coefficients ranging from 0.440 to 0.696, reaching the significance level of $p < 0.001$.

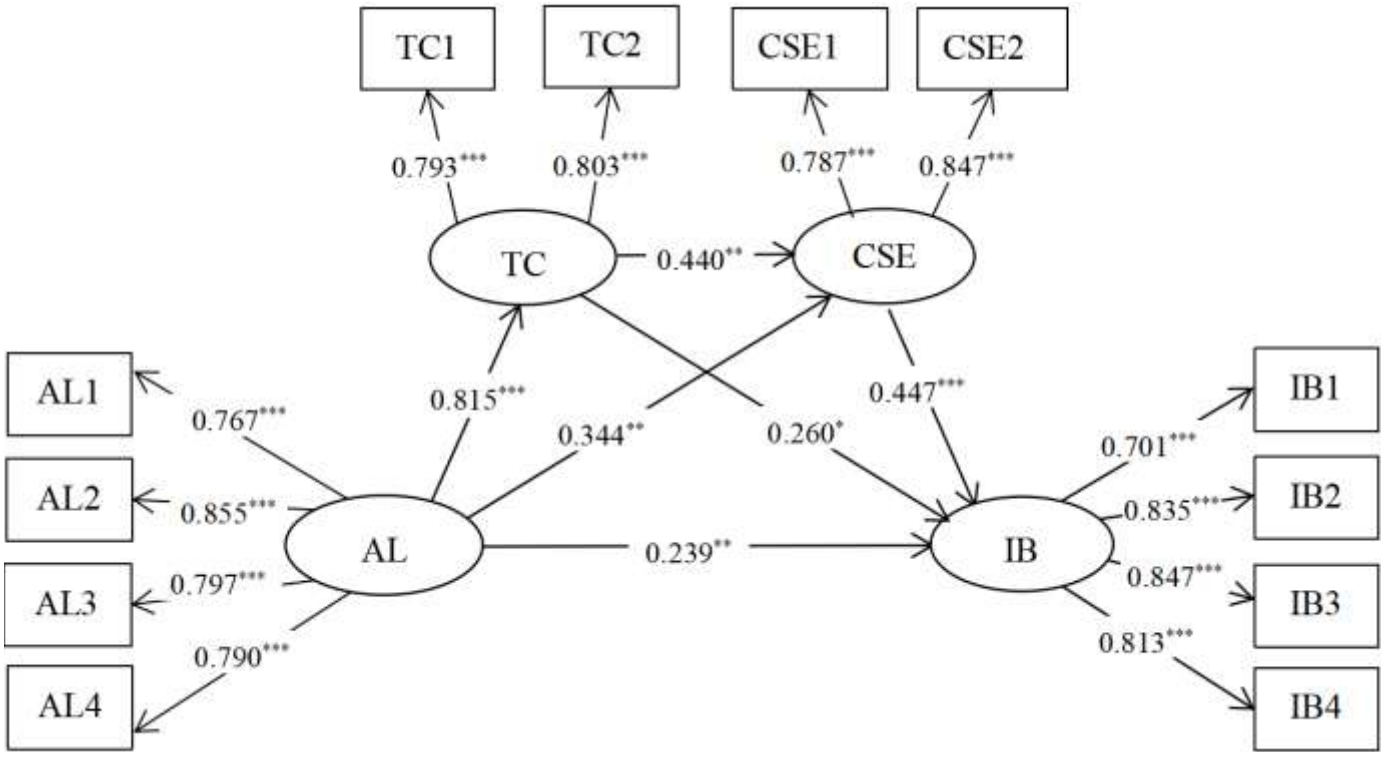

Figure 2. Mediating effects on the effect of college students' perceived authentic leadership on innovation behavior. The effect values in the table are standardized parameter values; AL=authentic leadership; TC=trust climate; CSE=creative self-efficacy; IB=innovation behavior; AL1= self-awareness; AL2=relational transparency; AL3=internalized moral perspective; AL4=balanced processing; TC1= affect-based trust; TC2=cognition-based trust; CSE1=problem solving ability; CSE2=innovation ability; IB1= modes of thinking; IB2=academic exploration; IB3=life practice; IB4=academic study, ***$p<0.001$; **$p<0.01$; *$p<0.05$.
Source: Authors

Total effect

To assess the effect of college students' perceived authentic leadership on their innovation behavior, the present study developed a total effect model. The model fit indicators are as follows: χ^2/df = 6.940, RMSEA = 0.074, SRMR = 0.038, CFI = 0.972, NFI = 0.968, GFI = 0.961, and TLI = 0.959, which suggest that the model has a good fit. The results revealed that college students' perceived authentic leadership significantly and positively influenced their innovation behavior (β = 0.765, $p<$ 0.001). Thus, H1 was supported.

Mediating effect

On the basis of the total effect model, this study further tested the mediating effects of trust climate and creative self-efficacy. The model fit indicators are as follows: χ^2/df = 4.780, RMSEA = 0.067, SRMR = 0.036, CFI = 0.971, NFI = 0.964, GFI = 0.954, and TLI = 0.960, which suggest that the model has a good fit. As shown in Figure 2, the results revealed that college students' perceived authentic leadership significantly and positively affected innovation behavior (β = 0.239, p < 0.01). Moreover, the students' perceived authentic leadership significantly and positively influenced trust climate and creative self-efficacy (β = 0.815, p < 0.001; β = 0.344, p < 0.01). Furthermore, trust climate and creative self-efficacy significantly and positively influenced innovation behavior (β = 0.260, p < 0.05; β = 0.447, p < 0.001); and trust climate significantly and positively influenced creative self-efficacy (β = 0.440, p < 0.01).

This study further adopted a nonparametric percentile Bootstrap method (repeated sampling for 5000 times) to evaluate the mediating effect. The confidence interval (CI) was set at 95%. If the CI did not include 0, then the mediating effect was considered significant (Hayes, 2013).

Among the paths for the effect of college students' perceived authentic leadership on their innovation behavior, paths M1 (AL → TC → IB), M2 (AL → CSE → IB), and M3 (AL → TC → CSE → IB) were significant, as shown in Table 3. The mediating effect size of paths M1, M2, and M3 was 0.212 (95% CI [0.054, 0.379]), 0.154 (95% CI [0.056, 0.298]), and 0.160 (95% CI [0.078, 0.295]), respectively. These values suggest that trust climate and creative self-efficacy have both single and

Table 3. Direct and indirect effects of college students' perceived authentic leadership on their innovation behavior.

Path	Estimation	Bootstrap 95% CI	
		Lower	Upper
Direct effects			
AL→IB	0.239	0.074	0.395
Indirect effects			
M1: AL → TC → IB	0.212	0.054	0.379
M2: AL → CSE → IB	0.154	0.056	0.298
M3: AL → TC → CSE → IB	0.160	0.078	0.295
Total effects			
AL→IB	0.765	0.717	0.809

ALQ=authentic leadership; TC=trust climate; CSE=creative self-efficacy; IB=innovation behavior.
Source: Authors.

serial mediating effects on the effect of college students' perceived authentic leadership on their innovation behavior. Thus, H2–H4 is supported.

DISCUSSION

Theoretical contributions

The present study verified that college students' perceived authentic leadership significantly and positively influenced innovation behavior, thereby supporting H1. The results revealed that teachers' authentic leadership is a crucial factor that affected college students' innovation behavior, which is consistent with the results of previous studies (Yamak and Eyupoglu, 2021). Authentic leadership is an open and multi view leadership style, which enables teachers to express their authentic values and behavioral patterns to establish relationships with students. This leadership style helps students to obtain self-worth and a sense of satisfaction, which helps strengthen their psychological security and motivates them to propose their creative ideas (Claudia et al., 2012). In addition, studies have indicated that through authentic leadership, teachers can encourage students to express their authentic views and break routine ideas and therefore promote students' innovation behavior.

Trust climate had a partial mediating effect on the relationship between college students' perceived authentic leadership and innovation behavior, thereby supporting H2. These results indirectly support the results of previous empirical studies. Teachers' authentic leadership was reported to have a positive effect on the trust climate (Kulophas et al., 2015), and a favorable trust climate was found to improve students' innovation behavior (Leighton et al., 2016). We inferred that this effect mainly results from the role model effect of teachers' authentic leadership. As a positive leadership style, teachers' authentic leadership can provide students affective and cognitive support and improve the trust climate. Studies have also indicated that a favorable trust climate encourages students to exchange ideas and help each other, which stimulates their innovation intention, thereby improving their innovation behavior.

Third, the results revealed that creative self-efficacy had a partial mediating effect on the relationship between college students' perceived authentic leadership and their innovation behavior, thereby supporting H3. Thus, teachers' authentic leadership can improve students' innovation behavior by improving their creative self-efficacy. The results of the present study also indirectly support previous empirical results that teachers' authentic leadership had a positive effect on creative self-efficacy (Srivastava et al., 2022) and that creative self-efficacy is a crucial factor that affected college students' innovation behavior (Chen et al., 2022). Teachers' authentic leadership may provide students more space to improve their skills, increase their confidence in performing creative activities, and enhance their creative self-efficacy; Moreover, the increase in creative self-efficacy strengthens students' confidence in facing difficulties and challenges, thereby increasing their innovation behavior.

Finally, this study further identified that college students' perceived authentic leadership affects innovation behavior through the serial mediating effect of trust climate and creative self-efficacy, supporting H4. This result can be explained using social cognitive theory, which states that behavioral factors (innovation behavior) are affected by environmental factors (teachers' authentic leadership and trust climate) and individual factors (creative self-efficacy). Teachers' authentic leadership refers to the presentation of teachers' authentic self to the students, which facilitates the development of trust relationships with students and creation of a favorable trust climate (Algera and Lips-Wiersma, 2012). A favorable trust climate enables students to communicate with each other and exchange new ideas, strengthens their creative belief, and increases their creative self-efficacy. Moreover, students with high creative self-efficacy have greater confidence and can respond to

problems that they may encounter while learning with a positive mindset, which further enhances their innovation behavior. The result expounds the mechanism underlying the effect of college students' perceived authentic leadership on their innovation behavior and provides a new perspective for subsequent studies.

Practical significance

Based on the results, the present study provides the following suggestions for leaders and teachers in higher education institutions. First, because college students' perceived authentic leadership was shown to significantly improve their innovation behavior, cultivating teachers' authentic leadership behavior is critical. Leadership training can improve individual leadership behavior (Zhang et al., 2015). Therefore, higher education institutions should focus on cultivating teachers' authentic leadership behavior through targeted training that will equip them to guide students with a confident and optimistic attitude, thereby promoting students' innovation behavior. In addition, higher education institutions should encourage teachers to establish sincere and authentic relationships with students and strive to build a harmonious school culture.

Second, this study revealed that trust climate had a partial mediating effect on the effect of college students' perceived authentic leadership on their innovation behavior. Therefore, to improve the innovation behavior of college students, teachers should strive to improve the trust climate by creating more opportunities for communication with the students, understanding the difficulties they encounter, and providing necessary support. In addition, teachers can develop team training activities to encourage students to help each other and enhance their mutual trust (Nam, 2014), which, in turn, will promote the generation of innovation behavior.

Third, because creative self-efficacy had a partial mediating effect on the relationship between college students' perceived authentic leadership and innovation behavior, teachers should focus on cultivating and stimulating confidence in college students, establishing effective reward and incentive mechanisms to motivate the students to propose innovative ideas, and enhancing the students' creative self-efficacy. In addition, teachers should include innovative classroom teaching activities such as group discussions and innovation and entrepreneurship competitions to cultivate college students' creative thinking and further enhance their creative self-efficacy and innovation behavior.

Finally, this study verified that trust climate and creative self-efficacy had a serial mediating effect on the relationship between college students' perceived authentic leadership and their innovation behavior. Teachers' authentic leadership can help build a favorable trust climate, which improves the students' creative self-efficacy and ultimately their innovation behavior. The results implied that higher education institutions should especially consider the effect of trust climate and help teachers understand the concept. Therefore, we recommend that higher education institutions not only train the teachers in exhibiting authentic leadership behavior but also enhance communication with students through popular social media platforms (e.g., WeChat official account, Weibo, and TikTok), symposia, and other means. Moreover, they should address the needs of college students in a timely manner and actively provide care and support to the students. These measures will enable the creation of a favorable atmosphere of trust as well as enhance the creative self-efficacy of the students and promote their innovation behavior.

Conclusion

The present study established a serial mediation model to explore the effect of college students' perceived authentic leadership on their innovation behavior. The results revealed that college students' perceived authentic leadership significantly and positively influenced their innovation behavior. Trust climate and creative self-efficacy had partial as well as serial mediating effects on the relationship between college students' perceived authentic leadership and their innovation behavior.

LIMITATIONS AND FUTURE DIRECTIONS

The present study confirmed the effect of college students' perceived authentic leadership of the teacher on the students' innovation behavior and revealed the mechanism underlying this effect. Nevertheless, the study had the following limitations. First, because the study sample included students from six higher education institutions in Hebei Province, China, the generalizability of the research results is limited. Future studies could consider expanding the geographical area of sampling to increase the generalization of the results. Second, this study adopted a cross-sectional design. Therefore, although the study identified the influential relationship among the variables, it could not determine the causal relationship between the variables. Longitudinal and experimental studies in the future could determine the causality of the variables. Finally, the study identified that trust climate and creative self-efficacy had partial mediating effects on the effect of college students' perceived authentic leadership on their innovation behavior. This result implied that the mechanism underlying this effect may involve other latent mediating factors. Therefore, future studies could focus on exploring additional mediating factors or possible moderating factors that may have theoretical and practical implications on the improvement of college students'

innovation behavior.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

Afsar B, Masood M (2017). Transformational leadership, creative self-Efficacy, trust in supervisor, uncertainty avoidance, and innovative w ork behavior of nurses. The Journal of Applied Behavioral Science 54(1):36-61.

Algera PM, Lips-Wiersma M (2012). Radical authentic leadership: Co-creating the conditions under w hich all members of the organization can be authentic. Leadership Quarterly 23(1):118-131.

Alruz JA, Bataineh OT, Khasaw neh S, Jaradat M (2020). Authentic leadership practices in the university setting: the theory of tomorrow. International Journal of Management in Education 14(3):229-244.

Alt D, Kapshuk Y, Dekel H (2023). Promoting perceived creativity and innovative behavior: Benefits of future problem-solving programs for higher education students. Thinking Skills and Creativity 47:101201.

Bamford M, Wong CA, Laschinger HK (2013). The influence of authentic leadership and areas of w orklife on w ork engagement of registered nurses. Journal of Nursing Management 21(3):529-540.

Bandura A (1977). Self-efficacy: Toward a unifying theory of behavioral change. Advances in Behaviour Research and Therapy 1(4):139-161.

Bandura A (1986). Social foundations of thought and action: A social cognitive theory. Journal of Applied Psychology 12(1):169-181.

Berraies S, Chaher M, Ben YK (2014). Employee empow erment and its importance for Trust, innovation and organizational performance. Business Management and Strategy 5(2):82.

Bock C, Zhang LN, Mayhew MJ (2020). How the university ecosystem shapes the innovation capacities of undergraduate students – evidence from Germany. Industry and Innovation 17(4):1-36.

Brislin RW (1970). Back-translation for cross-cultural research. Journal of Cross-Cultural Psychology 1(3):185-216.

Butler-Henderson K, Craw ford J (2020). Digitally empow ered students through teacher leadership: The role of authentic leadership. Journal of Applied Learning and Teaching 3(SI1):1-9.

Chen SQ, Wu J, Huang JQ, Cao JJ (2022). The impact of college students' creativity on their innovation behavior in the "Internet +" Era: The mediating role of creative self-efficacy. Security and Communication Netw orks 2(1):1-17.

Claudia P, Wesche JS, Streicher B, Braun S, Frey D (2012). Authentic leadership: An empirical test of its antecedents, consequences and mediating mechanisms. Journal of Business Ethics 107(3):331- 348.

Clegg C, Unsw orth K, Epitropaki O, Parker G (2002). Implicating trust in the innovation process. Journal of Occupational and Organizational Psychology 75(4):409- 422.

Costigan RD, Ilter SS, Berman JJ (1998). A multi-dimensional study of trust in organizations. Journal of Managerial Issues 10(3):303- 317.

Dai QW, Dai YH, Zhang CY, Men ZM, Chen ZY, Hu SL (2022). The influence of personal motivation and innovative climate on innovative behavior: Evidence from university students in China. Psychology Research and Behavior Management 15:2343-2355.

Gardner WL, Cogliser CC, Davis KM, Dickens MP (2011). Authentic leadership: A review of the literature and research agenda. The Leadership Quarterly 22(6):1120-1145.

Greenier VT, Whitehead G (2016). Tow ards a model of teacher leadership in ELT: Authentic leadership in classroom practice. Journal of Applied Language Studies 17(2):175-196.

Gu JB, He CQ, Liu HF (2017). Supervisory styles and graduate student creativity: The mediating roles of creative self-efficacy and intrinsic motivation. Studies in Higher Education 42(4):721-742.

Harris KJ, Wheeler AR, Kacmar, KM (2009). Leader–member exchange and empow erment: Direct and interactive effects on job satisfaction, turnover intentions, and performance. Leadership Quarterly 20(3):371- 382.

Hayes A (2013). Introduction to mediation, moderation, and conditional process analysis. Journal of Educational Measurement 51(3):335-337.

Hirst G, Knippenberg D, Zhou Q, Zhu CJ, Tsai PCF (2015). Exploitation and exploration climates' influence on performance and creativity: Diminishing returns as function of self-efficacy. Journal of Management 44(3):870-891.

Hoang G, Luu TT, Nguyen TT, Du T, Le LP (2022). Examining the effect of entrepreneurial leadership on employees' innovative behavior in SME hotels: A mediated moderation model. International Journal of Hospitality Management 102:103142.

Hsiao C, Lee YH, Chen HH (2016). The effects of internal locus of control on entrepreneurship: the mediating mechanisms of social capital and human capital. The International Journal of Human Resource Management 27(11):1158-1172.

Isaksen SG (2010). The climate for transformation: Lessons for leaders. Creativity and Innovation Management *16*(1):3- 15.

Javed A, Iqbal J, Iqbal SM, Imran M (2021). Sustainable leadership and employee innovative behavior: Discussing the mediating role of creative self-efficacy. Journal of Public Affairs 21(3):2547.

Yu SC (2018). A cross-level research of creative self-efficacy, organizational innovation climate and creative teaching performance of teachers in taiw an's junior high schools. Journal of Education 46(1):143-164.

Kim E, Koh E (2018). Avoidant attachment and smartphone addiction in college students: The mediating effects of anxiety and self-esteem. Computers in Human Behavior 84:264-271.

Kistyanto A, Rahman MF, Wisandiko FA, Setyaw ati EE (2022). Cultural intelligence increase student's innovative behavior in higher education: The mediating role of interpersonal trust. International Journal of Educational Management 36(4):419-440.

Kleynhans DJ, Heyns MM, Stander MW (2021). Authentic leadership and follow er trust in the leader: The effect of precariousness. SA Journal of Industrial Psychology 47(1):1-10.

Kulophas D, Ruengtrakul A, Wongw anich S (2015). The relationships among authentic leadership, teachers' w ork engagement, academic optimism and school size as moderator: A conceptual model. Social and Behavioral Sciences 47(1):79- 95.

Lee JC, Wan ZH, Hui SK, Ko PY (2022). More student trust, more self-regulation strategy? Exploring the effects of self-regulatory climate on self-regulated learning. The Journal of Educational Research 112(4):463-472.

Lei S, Qin CJ, Ali M, Freeman SS, Zheng SJ (2021). The impact of authentic leadership on individual and team creativity: A multilevel perspective. Leadership and Organization Development Journal 42(4):644-662.

Leighton JP, Seitz P, Chu MW, Gomez MC (2016). Operationalizing the role of trust for student w ellbeing, learning and achievement. International Journal of Wellbeing 6(2):57-79.

Lemonsa G (2010). Bar drinks, rugas, and gay pride parades: Is creative behavior a function of creative self-efficacy? Creativity Research Journal 22(2):151-161.

Li XY, Zhang BF, Jiang LP (2019). An empirical study of the factors of college students' innovative behavior. Educational Research 40(5):116-128.

Mcallister DJ (1995). Affect- and cognition-based trust as foundations for interpersonal cooperation in organizations. Academy of Management Journal 38(1):24-59.

Mou J, Chen SH, Xiao H, He W, Siponen M, Qiu H, Xu F (2021). Determinants of individual know ledge innovation behavior: A perspective of emotion, know ledge sharing, and trust. Journal of Organizational and End User Computing 33(6):10- 29.

Nam CW (2014). The effects of trust and constructive controversy on student achievement and attitude in online cooperative learning environments. Computers in Human Behavior 37:237-248.

Nunnally JC (1978). An overview of psychological measurement. Clinical Diagnosis of Mental Disorders 6(2):97-146.

Pachler D, Kuonath A, Frey D (2019). How transformational lecturers promote students' engagement, creativity, and task performance: The mediating role of trust in lecturer and self-efficacy. Learning and Individual Differences 69:162-172.

Park SY, Kim J (2021). Relation among perceived authentic leadership,

leader-member exchange and team performance of student athletes. Journal of Korean Society for the Study of Physical Education 26(1):227-241.
Patterson M, Warr P, West M (2004). Organizational climate and company productivity: The role of employee affect and employee level. CEP Discussion Papers 77(2):193-216.
Peus C, Wesche JS, Streicher B, Braun S, Frey D (2012). Authentic leadership: An empirical test of its antecedents, consequences, and mediating mechanisms. Journal of Business Ethics 107(3):331-348.
Purwanto A, Asbari M, Hartuti H, Setiana YN, Fahmi K (2021). Effect of psychological capital and authentic leadership on innovation work behavior. International Journal of Social and Management Studies 2(1):1-13.
Rego A, Sousa F, Marques C, Cunha M (2012). Authentic leadership promoting employees' psychological capital and creativity. Journal of Business Research 65(3):429-437.
Schuckert M, Kim TT, Paek S, Lee G (2018). Motivate to innovate: How authentic and transformational leaders influence employees psychological capital and service innovation behavior. International Journal of Contemporary Hospitality Management 30(2):776-796.
Selznick BS, Dahl LS, Youngerman E, Mayhew MJ (2022). Equitably linking integrative learning and students' innovation capacities. Innovative Higher Education 47(1):1-21.
Shang YF, Chong MP, Xu J, Zhu XJ (2019). Authentic leadership and creativity in China: The role of students' regulatory-focused behaviors and supervisors' power sources. Thinking Skills and Creativity 34:100592.
Shi LS, Chen SZ, Zhou YF (2023). The influence of social capital on primary school teachers' creative teaching behavior: Mediating effects of knowledge sharing and creative teaching self-efficacy. Thinking Skills and Creativity 47(1):101226.
Srivastava AP, Dhar RL (2019). Authentic leadership and extra role behavior: A school based integrated model. Current Psychology 38(3):684-697.
Srivastava AP, Shree S, Agarwal S (2022). Does authentic leadership develop inclusive classrooms: A model examination? International Journal of Educational Management 36(4):495-514.
Sun WQ, Meng CY, Wang WJ (2020). Research on the curriculum system of innovation and entrepreneurship ability cultivation of college students in application-oriented universities. Modern Education Management 12(7):75-81.
Teng CC, Hu CM, Chang JC (2020). Triggering creative self-efficacy to increase employee innovation behavior in the hospitality workplace. The Journal of Creative Behavior 54(4):912- 925.
Tierney P, Farmer SM (2002). Creative self-efficacy: Its potential antecedents and relationship to creative performance. Academy of Management Journal 45(6):1137-1148.
Walumbwa FO, Avolio BJ, Gardner WL, Wernsing TS, Peterson SJ (2008). Authentic leadership: Development and validation of a theory-based measure. Journal of Management 34(1):89-126.
Walumbwa FO, Wang P, Wang H, Schaubroeck J, Avolio BJ (2010). Psychological processes linking authentic leadership to follower behaviors. Leadership Quarterly 21(5):901- 914.
Wang QM, Lee KC, Hoque KE (2022). The mediating role of classroom climate and student self-efficacy in the relationship between teacher leadership style and student academic motivation: Evidence from China. The Asia-Pacific Education Researcher 3(5):1- 11.
Wang ST (2019). School heads' transformational leadership and students' modernity: The multiple mediating effects of school climates. Asia Pacific Education Review 20(3):329-341.
Wiewiora A, Kowalkiewicz A (2018). The role of authentic assessment in developing authentic leadership identity and competencies. Assessment and Evaluation in Higher Education 44(3):415-430.
Wu YS, Xu LP (2022). The effect of authentic leadership and organizational climate on the volunteering behavior of college students: A moderated mediation model. PsyCh Journal 11(6):852-862.
Yamak OU, Eyupoglu SZ (2021). Authentic leadership and service innovative behavior: Mediating role of proactive personality. SAGE Open 11(1):1-15.
Zhang XA, Li N, Ullrich J, Van Dick R (2015). Getting everyone on board: The effect of differentiated transformational leadership by CEOs on top management team effectiveness and leader-rated firm performance. Journal of Management 41(7):1898-1933.
Zhao L, Li HG, Chen L (2022). Factors influencing Chinese college students' innovation and entrepreneurship ability: The moderating effect test based on entrepreneurial atmosphere. Sustainability 14(20):13020.
Zhou J, George JM (2003). Awakening employee creativity: The role of leader emotional intelligence. The Leadership Quarterly 14(4):545-568.

Related Journals: