Research on the Subject Teaching Construction and Countermeasures of Creative Writing based on Employment Orientation

Qingyan Meng ✉ 🔘 1*

Abstract

Creative writing is important because it allows individuals to express their thoughts, feelings, and experiences in a unique and imaginative way. It promotes self-expression and helps to develop writing skills, as well as stimulates the imagination and encourages critical thinking. Additionally, creative writing can serve as a form of therapy and provide a means of exploring and understanding emotions. Therefore, it is important to identify these factors that affect creative writing. The purpose of this study was to investigate a teaching method that teaches construction and countermeasures in creative writing by combining problem-based learning, project-based learning, and the support of technology. Data was collected from 425 students of colleges and universities in China with the help of a structured questionnaire. SmartPLS 4 and SPSS were utilized for data analysis. The findings of the study showed that Problem-based learning, Problem-based blended learning teaching construction and project base learning orientation has a significant positive impact on creative writing. Furthermore, the finding shows that technical support to develop writing skills significantly moderates this relationship. The study provided valuable insights into the current state of creative writing education and the strategies that can be used to improve it. The results can be used by teachers, educational administrators, and policymakers to design better programs and initiatives that support the development of creative writing skills and prepare students for careers in this field.

Keywords: Problem-based Learning; Problem-based Blended Learning Teaching Construction; Project-based Learning Orientation; Creative Writing; Technology Support to Develop the Writing Skills

---

1* Ph.D, International College, Krirk University, Bangkok, Thailand, fengqiyunyong2022@163.com

Introduction

Creative writing is an important ability that can help people effectively share their ideas. In recent years, there has been an increase in the demand for professionals with strong writing skills. As a result, several universities and colleges have begun to offer creative writing courses (Taylor et al., 2019). Yet, there is currently a scarcity of research on creative writing instructional approaches and remedies based on employment orientation. As a result, the purpose of this research is to evaluate the current state of creative writing education and to recommend effective remedies to improve the quality of creative writing education (Stephenson et al., 2022).

The current status of creative writing education is not suited for the industry's employment needs. Many students struggle to apply their writing skills in real-world circumstances, which hurts their employability. In addition, there is a dearth of standardized teaching techniques and materials for creative writing instruction. As a result, the level of education supplied by various institutions varies (Aristizábal et al., 2017).

Despite the growing demand for professionals with good writing skills, there is still a paucity of research on creative writing education techniques and remedies based on employment orientation. The literature on creative writing education has generally concentrated on theoretical aspects of writing rather than practical applications in industry (Cameron et al., 2022). Furthermore, there is a scarcity of standardized teaching materials and methodologies for creative writing education, resulting in discrepancies in the quality of education supplied by various schools (Goodman et al., 2022). As a result, there is a considerable gap in the research discussing successful ways of teaching creative writing that is in line with industry standards. This study seeks to fill this need by evaluating the current state of creative writing education and recommending effective countermeasures to improve educational quality based on employment orientation.

Therefore, the purpose of this research is to investigate the effect that different methods of instruction have on creative writing (Problem-based learning, Problem-based blended learning, and Project-based learning), as well as to evaluate the moderating function that technological assistance plays in the process of improving writing abilities. The purpose of this study is to give empirical data on the efficacy of these teaching approaches and technologies in developing students' creative writing skills.

Literature Review

Problem-Based Learning

Problem-based learning approach does not have a clear definition, its advocates tend to agree on several of its fundamental characteristics (Taradi et al., 2005). The problem-based learning approach is a common type of research-based and cooperative learning method that is distinguished by active student interaction and comparative learning (Mann et al., 2021). Students who are taught using the problem-based learning technique typically work together to find a solution to a particular issue, create a product geared toward a certain audience, and then evaluate both the finished product and the process by which it was created (Jabarullah & Iqbal Hussain, 2019). According to Moallem et al. (2019), the problem-based learning approach is an efficient method for developing capabilities appropriate for the 21st century because it fosters critical thinking in addition to problem-solving, interpersonal communication, information and media literacy, collaboration, leadership, and teamwork, as well as innovation and creativity. The problem-based learning method has been shown to improve problem-solving abilities, and academic performance, and influences a positive perception of the learning profession (Denham, 2006; Tomás et al., 2020). Studies examining the impact of the problem-based learning approach on student teachers have shown that the problem-based learning method improves problem-solving abilities (Jabarullah & Iqbal Hussain, 2019). In addition, student instructors can benefit from formative evaluation since it assists them in achieving an appropriate understanding of their learning goals. This, in turn, can enrich the learning experiences of students who are under their supervision (Turnbull et al., 2021). These include presenting students with the opportunity to

work on a difficult topic, participate in ongoing issues, discover valid answers, assist with project selection, evaluate trends, critique and reassess work, and develop a standard output. However, these components were operationalized in a variety of distinct ways by the educators who participated in our study, although they all incorporated these components into their problem-based learning strategies.

Problem-Based Blended Learning Teaching Construction

Problem-based blended learning is a teaching approach that combines traditional classroom instruction with online and technology-based learning (Cheng et al., 2019). Students participate in problem-based blended learning by being given challenges or situations that are based in the real world and being encouraged to use technology and other resources to collaborate and find answers to those difficulties (Ates-Cobanoglu & Cobanoglu, 2021). There are many advantages to using problem-based blended learning in the education of construction workers. To begin, it allows students to work on real-world challenges, which boosts their ability to think critically and find solutions to real-world issues. Second, it allows students to work together with their classmates and efficiently communicate with one another, enabling them to develop crucial skills in cooperation and communication that are essential (Halverson & Graham, 2019). The utilization of various technological tools during Problem-based blended learning instruction in the construction industry can also serve to improve the quality of the student's educational experience (J. Singh et al., 2021). Students can, for instance, utilize modeling software to build and depict their solutions, or they can use technologies such as virtual and augmented reality to experience their concepts in a real-world setting (Karma et al., 2021). Students benefit from this hands-on experience in both their comprehension of difficult ideas and their ability to remember knowledge over the long term.

To successfully utilize problem-based blended learning in construction education, instructors need to carefully develop and arrange problem-based activities (Chao et al., 2015). This is to ensure that the activities correspond with the learning outcomes and course goals that are being pursued. In addition, teachers should offer students clear direction and support as they go through the problem-based tasks, as well as regular opportunities for reflection and feedback on their progress (Taradi et al., 2005).

Project Based Learning Orientation

The concept of the problem-based learning orientation approach refers to involving two or more students at a certain level in the planning, delivery, and collaboration process and/or principally evaluating students through reflective dialogue and the sharing of learning expertise (Brandenburger et al., 2022). The problem-based learning orientation strategy has been shown to provide novice students with a valuable learning experience, and a varied variety of knowledge, and to aid them in their professional and personal progress (Gutierrez-Gutierrez et al., 2018). Working in a team permits transforming students from "experts" to "expert learners". Students can also collaborate in the classroom with teachers and share authority and expertise with them on various topics, therefore sharing the discovery process (Diaz-Fernandez et al., 2017). Problem-based learning orientation approach offers students and learners many benefits and makes it an overall very rewarding experience (Dolmans et al., 2015). Working in a team allows students to learn through a different pedagogical approach or with a different perspective, and using the problem-based learning orientation approach offers students and learners professional and emotional support (e.g., pedagogical skills), as well as increased learning and professional and personal development (e.g., gains in self-confidence) (Könings et al., 2018). According to Wang et al. (2021), the problem-based learning orientation approach allows students to critically evaluate their field experiences while learning to teach by sharing their own. Regardless of the inherent drawbacks of this learning style, pupils who engage in groups gain more than those who work alone. Students who collaborate can assist one another and thereby reach higher levels of achievement (Jacob Kola & Sunday, 2015). The problem-based learning orientation approach process has an impact on the function of a mentor, who must provide both individual and group feedback, and it encourages students to form solid professional relationships while also providing adequate assistance (Keinänen et al., 2018).

Creative Writing

Writing creatively requires students to engage in productive language activities, which in turn

requires them to produce a variety of children's literary genres as part of their education. The findings of students' creative writing demonstrate that they are competent in the cognitive stage of the creative process, which is the stage where they investigate ideas to develop their writing (Carmeli et al., 2010). Activities involving creative writing are carried out in a directed fashion in elementary schools; hence, teachers are required to construct learning that can assist pupils in accomplishing this goal. This article explores the assessment concept of assessment as learning, which aims to involve students in writing activities to obtain more meaningful experiences, learn from mistakes, and make improvements in both processes and results (Smith, 2020). This alternate method of teaching creative writing in elementary schools, known as assessment as design, can take the form of writing assignments that take a process-oriented approach, writing stimuli that are based on visual representation tactics, and self- and peer-evaluation rubrics (N. Singh et al., 2021).

Technology Support to Develop Writing Skills

Writing is a skill that is very required in the culture of today, and as a result of technological improvements, it is currently easier than it has ever been for an individual to improve their writing abilities. There are now many tools and resources available to writers, thanks to the widespread availability of the internet and personal computers (Wickramasinghe, 2010). These tools and resources assist writers to strengthen and improve the quality of their work. The usage of spell checkers and grammar checkers, for example, can help in the detection and repair of problems in real time, which enables writing that is both more effective and free of errors. In addition, there are groups and forums devoted to writing that can be found online. These communities and forums can supply authors with constructive criticism and suggestions that can help authors improve their talents. In addition, one can learn new writing tactics and styles through the use of the numerous online courses and tutorials that are currently available.

Access to a variety of different types of productivity tools is another way that technology can be able to assist in the improvement of writing skills (Kutlu, 2013). Applications such as Evernote and Google Docs can be of assistance to authors in the process of arranging their thoughts and notes in a way that makes them not only well-organized but also conveniently accessible. In addition, many programs give features like collaboration tools that enable numerous people to work on the same document at the same time. This makes it feasible for multiple individuals to collaborate on the same document simultaneously. In addition, programs like Scrivener and WriteRoom were designed specifically for writers and provide a clutter-free and undistracted environment in which the writer can concentrate on producing new work. These programs were developed specifically for authors. The process of writing can be made much easier by technology, which has also made it simpler to gain access to a wide range of knowledge and study (Code et al., 2020). Both of these things can be of great aid to an individual when they are engaged in the process of writing. Writers can now easily acquire the information and sources they require to support their writing and aid enhance the accuracy and credibility of their work with only a few clicks of the mouse. This makes it far simpler for writers to produce work that is correct and credible.

Problem-based Learning and Creative Writing

Problem-based learning is an instructional approach that involves students working together to solve real-world problems or complex, open-ended tasks. This approach has been widely used in a variety of fields, including education, medicine, and engineering (Alt, 2015). In recent years, researchers have begun to explore the impact of problem-based learning on creative writing, with a focus on how this approach can support the development of students' creative writing skills. Studies have shown that problem-based learning has a significant and positive impact on creative writing. This approach has been found to enhance students' motivation and engagement in creative writing, as well as their ability to generate new and innovative ideas. In problem-based learning, students are allowed to apply their knowledge and skills to real-world problems or tasks, which can help to develop their creativity and critical thinking skills. Additionally, problem-based learning encourages collaboration and communication among students, which can lead to the development of new and diverse perspectives and ideas (Taylor et al., 2019). However, it is important to note that the impact of problem-based learning on creative writing will depend on various factors, including the design of the problem-based learning task, the characteristics of the

students, and the teaching methods used. Additionally, while PBL has been found to have a positive impact on creative writing, it may not be the best approach for all students or in all contexts.

H1: Problem-based learning has a significant and positive impact on creative writing

Problem-base Blended Learning Teaching Construction and Creative Writing

Problem-based blended learning problem base blended learning teaching construction is an instructional approach that integrates traditional classroom teaching with technology-based learning (Pape, 2010). This approach has been found to have a significant and positive impact on creative writing. Problem-based blended learning teaching construction provides students with the opportunity to actively engage with complex and real-world problems, encouraging critical thinking and problem-solving skills. These skills are essential for creative writing, as writers must often identify and solve problems related to character development, plot, and themes in their writing. Furthermore, problem base blended learning teaching construction provides students with access to a variety of digital resources and tools, including multimedia and online writing communities, which can be used to enhance their writing skills (Heilporn et al., 2021). The use of technology in problem base blended learning teaching construction also encourages students to be more autonomous learners, enabling them to take control of their learning and explore writing topics that are of personal interest to them. This can result in a higher level of engagement and motivation, leading to more creative and original writing. In conclusion, problem base blended learning teaching construction combination of traditional classroom instruction and technology-based learning provides a powerful platform for developing creative writing skills and promoting student engagement and motivation.

H2: Problem-based blended learning teaching construction has a significant and positive impact on creative writing

Project-base learning orientation and Creative Writing

Project-based learning is a student-centered approach that focuses on the development of complex and real-world projects that are tied to curriculum standards. This approach is designed to support students' engagement and motivation, as well as the development of their critical thinking and problem-solving skills (Jin & Snook, 2022). In recent years, researchers have begun to explore the impact of Project-based learning orientation on creative writing. Studies have shown that Project-based learning orientation has a significant and positive impact on creative writing. Project-based learning also encourages collaboration and communication among students, which can lead to the development of new and diverse perspectives and ideas. Additionally, Project-based learning orientation can help students to see the connection between their writing skills and the wider world, which can increase their motivation and engagement in creative writing (Göçen, 2019). However, it is important to note that the impact of Project-based learning orientation on creative writing will depend on various factors, including the design of the project, the characteristics of the students, and the teaching methods used. Additionally, while Project-based learning orientation has been found to have a positive impact on creative writing, it may not be the best approach for all students or in all contexts.

H3: Project-based learning orientation has a significant and positive impact on creative writing

Technology Support to Develop Writing Skills as a moderator between Problem-based Learning and Creative Writing

Technology support moderates the relationship between problem-based learning (PBL) and creative writing by providing additional resources and tools that can enhance the learning experience. By incorporating technology into the PBL approach, students are given access to a wider range of information and resources that can help them develop their writing skills. Moreover, technology can also provide students with a more engaging and interactive learning experience, which can increase their motivation and interest in the learning process (Niiranen, 2021). This can lead to more meaningful and impactful learning, as students are more likely to retain information and apply it in their writing when they are engaged and motivated. Additionally, the use of technology in PBL can provide students with the opportunity to collaborate and work

with others, allowing for more diverse perspectives and ideas to be brought into the learning process. This can enhance the creative writing process, as students are exposed to different writing styles and techniques, and are encouraged to think outside of the box (Li & Li, 2020). In conclusion, technology support can help to moderate the relationship between PBL and creative writing by providing additional resources and tools, increasing student engagement and motivation, and promoting collaboration and diversity in the learning process.

H4: Technology support to develop writing skills moderate the relationship between problem-based learning and creative writing

Technology Support to Develop Writing Skills as a moderator between Problem-base Blended Learning Teaching Construction and Creative Writing

The relationship between problem-based blended learning teaching construction and creative writing can be moderated by the support of technology, which can provide extra resources and tools that can enrich the learning experience. Students are given access to a larger variety of information and resources that can assist them in developing their writing abilities when the problem-based blended learning teaching style incorporates technology into the instructional methodology. Students can have the chance to interact and work with others if a problem-based, blended learning classroom makes use of technology (Han et al., 2021). This opens the door for a wider range of perspectives and ideas to be incorporated into the learning process. Students will be exposed to a variety of writing styles and strategies, and they will be pushed to think creatively as a result of this activity. This can be beneficial to the creative writing process. Technology support helps to moderate the relationship between problem-based blended learning teaching construction and creative writing by providing additional resources and tools, increasing student engagement and motivation, and promoting collaboration and diversity in the learning process. These benefits accrue in the context of the classroom.

H5: Technology support to develop writing skills moderate the relationship between problem base blended learning teaching construction and creative writing.

Technology Support to Develop Writing Skills as a moderator between Project-based Learning Orientation and Creative Writing

The relationship between project-based learning orientation and creative writing can be moderated by the support of technology, which can provide additional resources and tools that can enrich the learning experience. Students are provided with access to a more extensive variety of material and resources that can assist them in the development of their writing skills when the project-based learning approach is combined with technology. In addition, students can benefit from a learning experience that is both more dynamic and engaging thanks to the use of technology, which in turn can boost the students' level of motivation and interest in the process of learning. When students are interested and motivated to study, they are more likely to remember what they have learned and apply it in their writing. As a result, this can lead to learning that is more meaningful and has a greater impact. In addition, problem-based learning can allow students to cooperate and work with other people, which opens the door to the incorporation of a wider range of viewpoints and ideas into the learning process. Students will be exposed to a variety of writing styles and strategies, and they will be pushed to think creatively as a result of this activity. This can be beneficial to the creative writing process. Based on the above discussed literature following study model has been established as shown in Figure 1.

H6: Technology support to develop writing skills moderate the relationship between project base learning orientation and creative writing
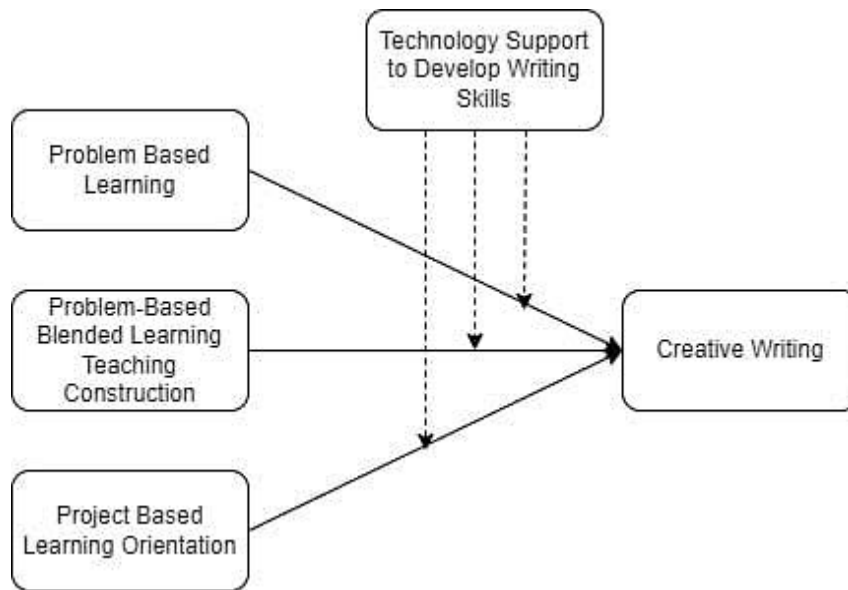
Figure 1. Conceptual framework

Methodology

To achieve the objective of the study a quantitative study was conducted. To choose the sample of 425 students, the technique of convenience sampling was utilized. This strategy entails identifying volunteers who can easily be reached by the researcher and are readily available. A questionnaire was given to the participants in order to collect data from them. Questions with no room for response were included in the questionnaire, and their purpose was to gather information about the student's thoughts on the topic that was being examined. Data were collected from December 2022 to January 2023. The questionnaire underwent preliminary testing to determine whether or not it was valid and reliable. Statistical approaches, specifically SPSS and clever PLS 4, were utilized in order to do an analysis of the data obtained from the questionnaire. The research was carried out in a manner that was compliant with ethical standards and procedures. The participants were briefed on the objectives of the study, and they are going to be requested their consent after receiving this information. During every stage of the research, strict adherence to privacy and confidentiality standards was ensured. Table 1 shows the demographic profile of the respondents.

Table 1. Demographic profile of the respondents

Demographic item		Frequency
Gender	Male	239
	Female	186
Age	16-19 years	188
	19-23 years	130
	More than 23 years	107
Education	College	286
	University	139
Use of technology for creative writing	Yes	280
	No	145

Measure

The questionnaires for each variable including problem-based learning, problem-based blended learning teaching construction, project-based learning orientation, creative writing, and technology support for developing writing skills were adapted from those used in previously conducted research. To evaluate the teaching strategies, dimensions such as problem-based learning (six items), problem-based blended learning teaching construction (five items), project-based learning orientation (five items), creative writing (fifteen items), and technology support to

develop writing (nine items) were adopted from (Ali Khan et al., 2021). The scale of problem-based learning was adopted by (Mann et al., 2021), the scale of problem-based blended learning teaching construction was adopted by (Bahji, Alami, 2015), and the scale of the project-based learning orientation was adopted from (Guo et al., 2020). The scale of creative writing was adopted (Kareem, 2019), and the scale of technology support for developing writing skills was adopted (Han et al., 2021). In addition, this investigation made use of the Likert scale, which consists of five levels and ranges from 1 (which denotes "not at all") to 5 (which denotes "very much") to evaluate each teaching strategy, problem-based learning, problem-based blended learning teaching construction, project-based learning orientation, creative writing, and technology support to developing writing skills.

Results

The Smart-PLS 4.0 approach of partial least square structural equation modeling (PLS-SEM) was employed to verify the model in this investigation. Our data were analyzed using this technique. One reason PLS-SEM was selected over covariance-based SEM was because of its suitability for exploratory research. Moreover, PLS-SEM is more intuitive to decipher than its covariance-based counterpart. To begin, it is important to note that an experimental approach was taken in this work. A second advantage of the PLS method is that, due to its adaptability, it may be used to analyze data collected from small samples.

Measurement Model

Both the model's dependability and its validity are crucial factors to think about while working with measurement models. In this study, we used Cronbach's alpha, roh-A, composite reliability, and average variance extract to determine how well we could trust the model. It was also analyzed using convergent and discriminant validity to make sure the model was reliable(Hair et al., 2016). The results of the models employed in this study to analyze the dependent relationships between all variables are shown in Table 2 and Figure 2. Cronbach's alpha needs to be above 0.70 before it can be regarded as reliable (Avotra et al., 2021; Yingfei et al., 2021). Cronbach's alpha for the model variables in this study is greater than 0.70 on the whole. Values are listed in Table 3. In accordance with the given Cronbach alpha cutoff, here are the results. This is the direct cause of the acceptance of all ideals. As a second point, we have adjusted the roh-A values of all the variables such that they meet the set standard. In the third and last step of the analysis, the composite reliability (CR) and average variance extract (AVE) of the model variables will be investigated. The acceptable values of the variables for composite reliability are both greater than 0.5, while the acceptable values of the variables themselves are greater than 0.7. The average variance extract is also greater than 0.5. Moreover, the values for the variables that are considered acceptable are those that are greater than 0.5. In addition to this, the outer loadings of each variable were analyzed, and the results may be found in Table 2 below. When it comes to evaluating the acceptable outside loadings for a variety of different objects, a value that is more than 0.6 is deemed to be appropriate Figure 2. There is not a single variable that does not contain at least one item with a value that is greater than 0.6.
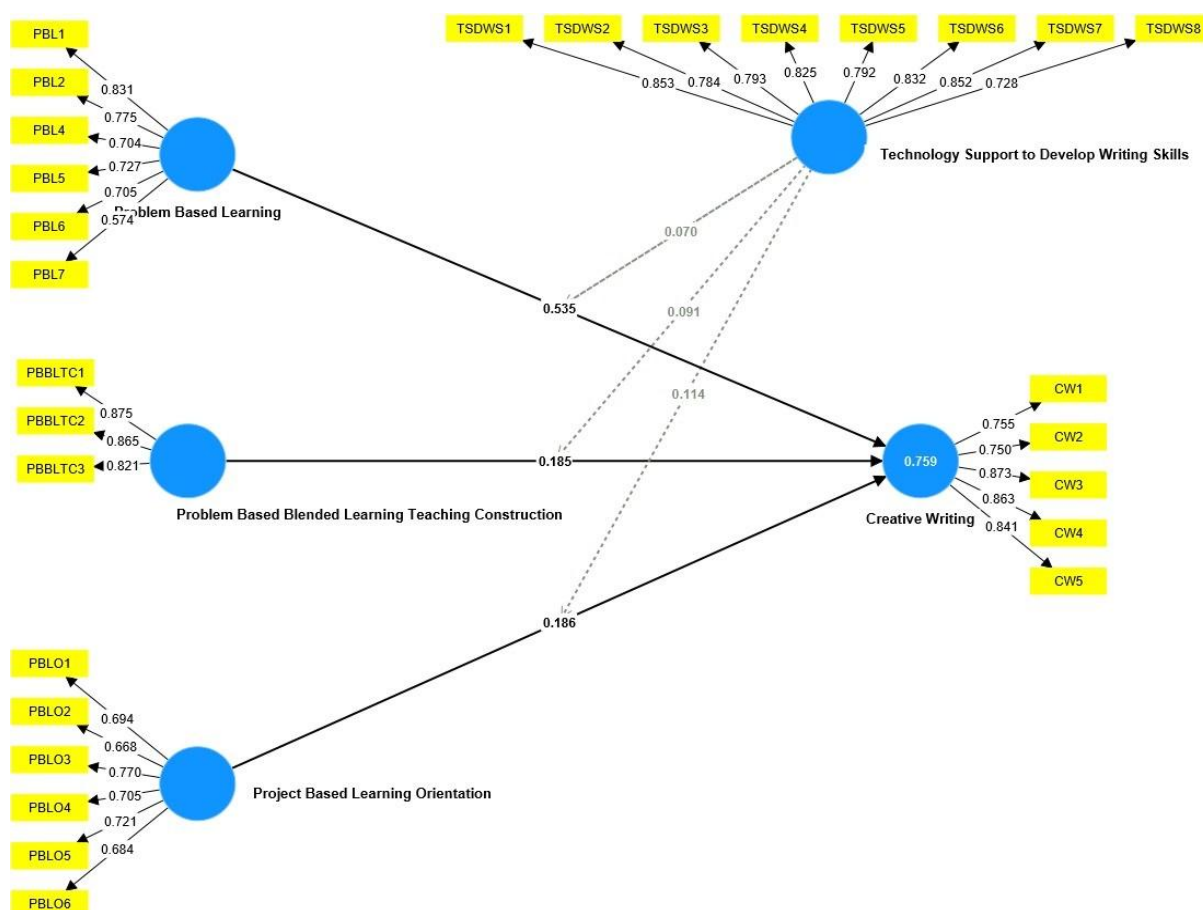
Figure 2. Measurement Model

Also, the variance inflation factor was used to look at the collinearity issue that arose throughout this research (VIF). According to the study's guidelines, VIF values below 0.5 are optimal (Hair et al., 2014). VIF values for research model constructs are presented in Table 2. A wide array of outcomes are encompassed by this range. It's proof that every part's VIF value is above the threshold required for inclusion. Thus, collinearity was not an issue for the research model used in this investigation.

Table 2. Construct Reliability and Validity

	Items	Outer Loading	VIF	Cronbach Alpha	CR	AVE
Creative Writing	CW1	0.755	1.856	0.875	0.910	0.669
	CW2	0.750	1.868			
	CW3	0.873	3.227			
	CW4	0.863	3.209			
	CW5	0.841	2.640			
Problem Based Blended Learning Teaching Construction	PBBLTC1	0.875	1.952	0.814	0.890	0.729
	PBBLTC2	0.865	1.908			
	PBBLTC3	0.821	1.626			
Problem Based Learning	PBL1	0.831	2.220	0.838	0.867	0.523
	PBL2	0.775	2.073			
	PBL4	0.704	2.328			
	PBL5	0.727	2.661			
	PBL6	0.705	2.165			

	Items	Outer Loading	VIF	Cronbach Alpha	CR	AVE
	PBL7	0.574	1.763			
Project Based Learning Orientation	PBLO1	0.694	2.327	0.801	0.857	0.501
	PBLO2	0.668	2.249			
	PBLO3	0.770	1.796			
	PBLO4	0.705	1.786			
	PBLO5	0.721	1.942			
	PBLO6	0.684	1.789			
Technology Support to Develop Writing Skills	TSDWS1	0.853	3.043	0.924	0.938	0.653
	TSDWS2	0.784	2.203			
	TSDWS3	0.793	2.604			
	TSDWS4	0.825	2.464			
	TSDWS5	0.792	2.245			
	TSDWS6	0.832	2.719			
	TSDWS7	0.852	2.779			
	TSDWS8	0.728	1.794			

In order to evaluate the efficacy of this research in terms of its capacity to discriminate across groups, the Fornell-Larcker criterion and the heterotrait-monotrait (HTMT) technique were applied (Hair et al., 2016). Using the Fornell-Larcker criterion, the validity of the discriminant function may be tested by taking the square root of the average variance extract values for all model variables. This will allow for an accurate assessment of the discriminant function (Hair et al., 2016). Table 3 presents an in-depth investigation of the discriminant validity of each variable, with the Fornell-Larcker criterion serving as the major reference point for this research. The discriminant validity of the model has been reached, as shown by Table 3 because the beginning values of all variables inside each column exhibit the highest values relative to their subsequent values (Hair et al., 2016).

Table 3. Discriminant Validity (Fornell-Larcker)

	CW	PBBLTC	PBL	PBLO	TSDWS
Creative Writing	0.818				
Problem Based Blended Learning Teaching Construction	0.442	0.854			
Problem Based Learning	0.796	0.398	0.724		
Project Based Learning Orientation	-0.591	-0.720	-0.718	0.708	
Technology Support to Develop Writing Skills	0.763	0.401	0.652	-0.487	0.808

Any of the variable values must have a value that is less than 0.85 in order to be deemed suitable by the HTMT rationing criterion. Despite this, HTMT results up to 0.90 are occasionally seen as appropriate (Hair et al., 2016). Table 4 presents the results of this inquiry in detail. It is evident that each number is within the acceptable range, which spans from 0.85 to 0.90, and can handle all of the possibilities provided. The investigation's findings demonstrated the discriminant validity of the model that was suggested for the study.

Table 4. Discriminant Validity (HTMT)

	CW	PBBLTC	PBL	PBLO	TSDWS
Creative Writing					
Problem Based Blended Learning Teaching Construction	0.524				

	CW	PBBLTC	PBL	PBLO	TSDWS
Problem Based Learning	0.796	0.446			
Project Based Learning Orientation	0.697	0.915	0.859		
Technology Support to Develop Writing Skills	0.850	0.461	0.670	0.564	

The quality of the model in the initial information is regarded to be strong whenever the R2 value is more than 0.5. Organizational performance's levels of structure effectiveness in this experiment (R2 = 0.759) were deemed to be moderate (Hair et al., 2016). Also, all of the latent variables in the models have Q2 values that are greater than 0, which is a prerequisite for inclusion in the models. Also, it serves as an illustration of an important sign. Table 5 displays the values of R2 and Q2.

Table 5. R-Square values and Q-Square values for the variables

	R-square	**Q2**
Creative Writing	0.759	0.745

Direct Path Analysis

This study utilized a bootstrapping method with 5,000 different samples for the purpose of performing statistical validation on the model hypotheses (Hair et al., 2016). The t and p values were analyzed in this study to determine whether or not the hypotheses should be accepted or rejected (Hair et al., 2016). The results of the H1 relationship, which predicted that problem-based learning has a significant and positive impact on creative writing, are broken down and explained in Table 6 and Figure 3, which can be found here. Both the value of t and the value of p indicate that this hypothesis should be accepted (t = 11.730, P = 0.0001). As a result, H1 is acceptable. The second hypothesis stated that problem-based blended learning teaching construction has a significant and positive impact on creative writing. both the value of t and the value of p indicate that this hypothesis should be accepted (t = 5.179, P = 0.0001). Therefore, H2 is accepted. The third hypothesis project-based learning orientation has a significant and positive impact on creative writing. Both the value of t and the value of p indicate that this hypothesis should be accepted (t = 3.720, p = 0.0001). As a result, H3 is accepted. Table 6 shows the results of the path analysis.

Table 6. Direct effects

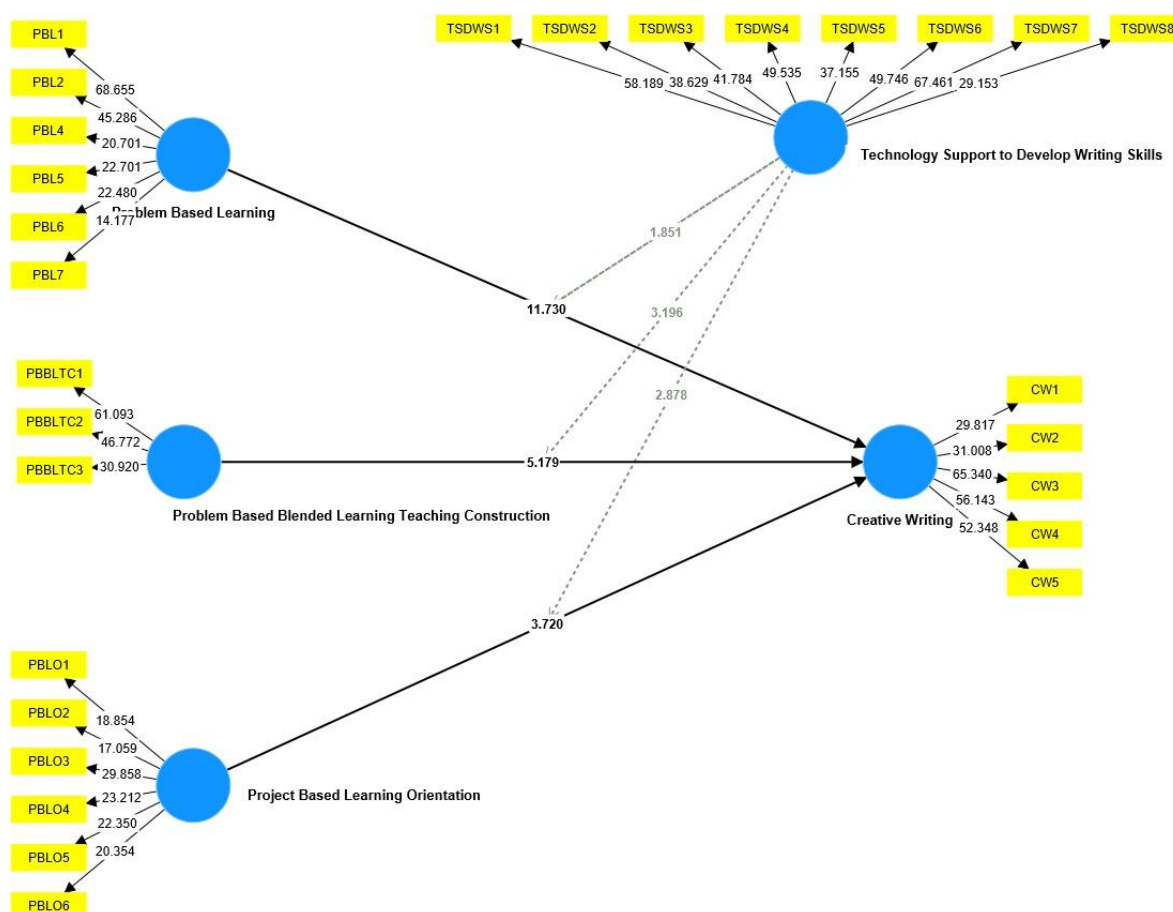|	**Original sample**	**T Values**	**P values**	**Decision**
PBL -> CW	0.535	11.730	0.0001	Accepted
PBBLTC-> CW	0.185	5.179	0.0001	Accepted
PBLO -> CW	0.186	3.720	0.0001	Accepted

Figure 3. Structural Model

Moderation Analysis

According to the fourth hypothesis of the study, technology support in developing writing skills moderate the relationship between problem-based learning and creative writing. The findings of the research indicated that technical support for developing writing skills moderates the relationship between problem-based learning and creative writing (t=1.851, p=0.031). As a result, H4 is approved. According to the fifth hypothesis of the study, technology support in developing writing skills moderate the relationship between problem base blended learning teaching construction and creative writing. The findings of the research indicated that technology support for developing writing skills moderates the relationship between problem base blended learning teaching construction and creative writing (t=3.196, p=0.001). As a result, H5 is approved. According to the sixth hypothesis of the study, technology support in developing writing skills moderate the relationship between project base learning orientation and creative writing. The findings of the research indicated that technology support for developing writing skills moderates the relationship between project base learning orientation and creative writing (t=2.878, p=0.002). As a result, H6 is approved. Figure 3 and Table 7 show the moderation analysis.

Table 7. Moderation Effect

	Original sample	T Values	P values
TSDWS x PBL-> CW	0.070	1.851	0.032
TSDWS x PBBLTC-> CW	0.091	3.196	0.001
TSDWS x PBLO-> CW	0.114	2.878	0.002

Discussion

This study's objectives were to investigate the relationship between problem-based learning, problem-based blended learning teaching construction, project-based learning orientation, and creative writing and to whether or not technology support to the development of writing skills moderated these relationships. This investigation, when it was all said and done, produced a number of important discoveries, which are as follows:

According to H1 of the study, problem-based learning has a significant and positive impact on creative writing. the findings of the study showed that problem-based learning has a significant and positive impact on creative writing. Problem-based learning is an educational approach that focuses on solving real-world problems as a means of learning. Servant-Miklos et al. (2019) have written about the impact of problem-based learning on creative writing and the results are mixed. Chao et al. (2015) argued that problem-based learning has a significant and positive impact on creative writing because it provides students with real-world contexts and challenges to respond to through writing. This helps to increase motivation and engagement, leading to more creative and imaginative writing. Others argue that while problem-based learning may be useful in certain subject areas, it may not necessarily have a direct impact on creative writing. Chao et al. (2015) and Servant-Miklos et al. (2019) argued that creative writing skills are more effectively developed through traditional writing exercises and focused instruction on writing techniques and craft. According to H2 of the study, problem-based blended learning teaching construction has a significant and positive impact on creative writing. The findings of the study showed that problem-based blended learning teaching construction has a significant and positive impact on creative writing. J. Singh et al. (2021) argued that the hands-on, experiential nature of project-based learning can enhance student engagement and motivation, leading to improved creative writing skills. J. Singh et al. (2021) argued that projects provide students with opportunities to think critically, make connections between what they are learning and real-world issues, and experiment with new writing techniques and styles. Könings et al. (2018) argued that writing is a complex process that requires dedicated time and focus, and that the distractions and interruptions that often accompany hands-on projects can negatively impact the writing process. According to H3 of the study, project-based learning orientation has a significant and positive impact on creative writing. The findings of the study showed that project-based learning orientation has a significant and positive impact on creative writing. Guo et al. (2020) argued that the integration of online and offline elements in a problem-based teaching approach can enhance student engagement and motivation, leading to improved creative writing skills. Wahono et al. (2020) argued that the problem-based approach encourages students to think critically and independently, allowing them to develop their own voice and style in writing. On the other hand, be more skeptical of the effectiveness of project-based learning orientation for creative writing (Konrad et al., 2020).

According to H4 of the study, Technology support to the development of writing skills and moderates the relationship between problem-based learning and creative writing. The findings of the study showed that Technology supports the development of writing skills and moderates the relationship between problem-based learning and creative writing. Many authors have written about this relationship and their views are diverse. Niiranen (2021) argued that technology support can enhance the impact of PBL on creative writing by providing students with tools and resources to help them develop their writing skills. Kutlu (2013) argued that the use of technology can lead to a reduction in critical thinking and imagination, resulting in less creative writing. According to H5 of the study, technology support for developing writing skills moderates the relationship between problem base blended learning teaching construction and creative writing. The findings of the study showed that technology support to the development of writing skills and moderates the relationship between problem base blended learning teaching construction and creative writing. Technology support can play a key role in developing writing skills and can moderate the relationship between problem-based blended learning teaching construction and creative writing. Many authors have written about this relationship and their views are diverse. Kumar (2021) argued that technology support can enhance the impact of problem-based blended learning teaching construction on creative writing by providing students with tools and resources to help them develop their writing skills.

According to H6 of the study, technology support for the development of writing skills that moderates the relationship between project base learning orientation and creative writing. The findings of the study showed that technology support for developing writing skills moderates the relationship between project base learning orientation and creative writing. Technology support can play a key role in developing writing skills and can moderate the relationship between project-based learning orientation and creative writing. Zaman et al. (2020) have written about this relationship and their views are diverse. Some authors argue that technology support can enhance the impact of project-based learning orientation on creative writing by providing students with tools and resources to help them develop their writing skills. On the other hand, if technology is used to support a more traditional and structured approach, it may have a more limited impact.

Conclusion

In conclusion, research on creative writing teaching strategies and countermeasures based on employment orientation has the potential to enrich and enhance creative writing teaching and learning. The results of this research can be used to build efficient instructional methodologies, curriculum designs, and employment-oriented evaluation methods. Additionally, by highlighting the link between creative writing and work prospects, this research has the potential to boost student engagement and career development. The impact of contextual circumstances and the necessity for additional research on this topic are just a couple of the research's shortcomings that must be acknowledged. Future research could expand on the body of work by examining the effects of novel and cutting-edge methods, including integrating technology, on the teaching and learning of creative writing with a focus on employment.

Future directions of research include the following: Longitudinal studies that track students over time could provide a greater understanding of the influence of teaching creative writing with an emphasis on career development and employability on students' professional growth and employability. Comparative studies comparing the impact of teaching creative writing with an emphasis on employment to other ways could provide a better knowledge of the efficacy of this method. Additional research might investigate the influence of contextual elements, such as cultural and economic inequalities, on the teaching and learning of creative writing with an employment focus. A multidisciplinary approach that integrates viewpoints from domains such as education, psychology, and sociology could result in a deeper understanding of the topic. Research could investigate the possibility of incorporating technology, such as virtual reality and gamification, into the employment-focused instruction of creative writing. However, One disadvantage of this form of instruction is that it can be time-consuming and necessitate extensive preparation on the part of both teachers and pupils. It can also be difficult for some students who struggle with group projects or need more structure in their studies. Then again, who doesn't? Children that are self-motivated, autonomous learners, and who thrive in collaborative contexts have the potential to achieve in school. Furthermore, this method may be especially successful for children from underserved communities who would benefit from a more hands-on, experiential learning approach.

Limitation

The results of the study might only be applicable to a certain demographic of students, and they might not be generalizable to other groups or different kinds of settings. It's possible that the research doesn't reflect the full extent of how contextual elements like cultural and economic variations affect the teaching and learning of creative writing with an employment focus. The quality and validity of the research methodologies used, such as sample selection and data processing, acted as a constraint on the research's scope and findings. The length of time during which the research was carried out is a constraint, and it is possible that its findings might not accurately reflect recent innovations or advances in the industry. The research does not adequately address the dynamic and intricate nature of work opportunities and how it relates to creative writing.

Implication

Theoretical Implications

The theoretical implications of research on the teaching of creative writing with an emphasis on employment orientation are as follows (i) The research may inform and improve the pedagogical approaches for teaching creative writing, specifically with a focus on employment orientation.: (ii) The study could provide insights into the design of a curriculum that incorporates employment-oriented elements in creative writing courses. (iii) The research may suggest effective assessment strategies to evaluate the effectiveness of teaching creative writing with an employment orientation. (iv) The study may help to identify the employability skills, such as communication and problem-solving, that are developed through the teaching of creative writing with an employment orientation. (v) The research may contribute to the understanding of how teaching creative writing with an employment orientation can help prepare students for their future careers. Overall, the research on the teaching of creative writing with an employment orientation has the potential to inform and improve the teaching and learning of creative writing and enhance students' career readiness.

Practical Implications

The practical implications of research on the teaching of creative writing with an employment orientation are as follows: The findings of the research can be used to develop teacher training programs that emphasize the employment-oriented approach to teaching creative writing. The research may inform the development of instructional materials and resources that support the teaching of creative writing with an employment orientation. The study may suggest practical strategies and approaches for teaching creative writing in the classroom that is aligned with employment orientation. The research may help to enhance student engagement and motivation in creative writing classes by emphasizing the connection between the subject and employment prospects. The findings of the research may provide insights into how teaching creative writing with an employment orientation can support student career development and preparation for the job market.

References

Ali Khan, M., Sohaib Zubair, S., Rathore, K., Ijaz, M., Khalil, S., & Khalil, M. (2021). Impact of Entrepreneurial Orientation Dimensions on Performance of Small Enterprises: Do Entrepreneurial Competencies Matter?. *Cogent Business & Management, 8*(1), 1943241.

Alt, D. (2015). Assessing the contribution of a constructivist learning environment to academic self-efficacy in higher education. *Learning Environments Research, 18*(1), 47-67.

Aristizábal, L. F., Cano, S., Collazos, C. A., Solano, A., & Slegers, K. (2017). Collaborative learning as educational strategy for deaf children: A systematic literature review. In G.-C. J.M., G.-G. J., & O. C.A.C. (Eds.), In *Proceedings of the XVIII International Conference on Human Computer Interaction* (pp. 1-8). New York, USA: Association for Computing Machinery.

Ates-Cobanoglu, A., & Cobanoglu, I. (2021). DO TURKISH STUDENT TEACHERS FEEL READY FOR ONLINE LEARNING IN POST-COVID TIMES? A STUDY OF ONLINE LEARNING READINESS. *Turkish Online Journal of Distance Education, 22*(3), 270-280.

Avotra, A. A. R. N., Chenyun, Y., Yongmin, W., Lijuan, Z., & Nawaz, A. (2021). Conceptualizing the State of the Art of Corporate Social Responsibility (CSR) in Green Construction and Its Nexus to Sustainable Development. *Frontiers in Environmental Science, 9*, 541.

Bahji, S. E., El Alami, J., & Lefdaoui, Y. (2015). Learners' Attitudes Towards Extended-Blended Learning Experience Based on the S2P Learning Model. *International Journal of Advanced Computer Science & Applications, 1*(6), 70-78.

Brandenburger, B., & Teichmann, M. (2022). Looking for participation-Adapting participatory learning oriented-didactic design elements of FabLabs in learning factories. In *Proceedings of the Conference on Learning Factories (CLF)*. Potsdam, German: University of Potsdam.

Cameron, T. A., Carroll, J. L. D., & Schaughency, E. (2022). Concurrent validity of the Preschool Early Literacy Indicators with a New Zealand sample of 5-year-olds entering primary school. *International Journal of School and Educational Psychology, 10*(2), 208-219.

Carmeli, A., Reiter-Palmon, R., & Ziv, E. (2010). Inclusive Leadership and Employee Involvement in Creative Tasks in the Workplace: The Mediating Role of Psychological Safety. *Creativity Research Journal, 22*(3), 250-260.

Chao, C. Y., Chen, Y. T., & Chuang, K. Y. (2015). Exploring students' learning attitude and achievement in flipped learning supported computer aided design curriculum: A study in high school engineering education. *Computer Applications in Engineering Education, 23*(4), 514-526.

Cheng, L., Ritzhaupt, A. D., & Antonenko, P. (2019). Effects of the flipped classroom instructional strategy on students' learning outcomes: a meta-analysis. *Educational Technology Research and Development, 67*(4), 793-824.

Code, J., Ralph, R., & Forde, K. (2020). Pandemic designs for the future: perspectives of technology education teachers during COVID-19. *Information and Learning Science, 121*(5-6), 409-421.

Denham, S. A. (2006). Early Education and Development. *Early Education and Development, 17*(1), 57-89.

Diaz-Fernandez, M., Pasamar-Reyes, S., & Valle-Cabrera, R. (2017). Human capital and human resource management to achieve ambidextrous learning: A structural perspective. *BRQ Business Research Quarterly, 20*(1), 63-77.

Dolmans, D., Michaelsen, L., Van Merriënboer, J., & Van Der Vleuten, C. (2015). Should we choose between problem-based learning and team-based learning? No, combine the best of both worlds!. *Medical Teacher, 37*(4), 354-359.

Göçen, G. (2019). The effect of creative writing activities on elementary school students' creative writing achievement, writing attitude and motivation. *Dergipark.Org.Tr, 15*(3), 1032-1044.

Goodman, G., Dent, V. F., Tuman, D., & Lee, S. (2022). Drawings from a play-based intervention: Windows to the soul of rural Ugandan preschool children's artistic development. *Arts in Psychotherapy, 77*, 101876.

Guo, P., Saab, N., Post, L. S., & Admiraal, W. (2020). A review of project-based learning in higher education: Student outcomes and measures. *International Journal of Educational Research, 102*, 101586.

Gutierrez-Gutierrez, L. J., Barrales-Molina, V., & Kaynak, H. (2018). The role of human resource-related quality management practices in new product development A dynamic capability perspective. *International Journal of Operations & Production Management, 38*(1), 43-22.

Hair, J. J., Hult, G., Ringle, C., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (PLS-SEM)*. London, UK: Sage publications

Halverson, L., & Graham, C. (2019). Learner Engagement in Blended Learning Environments: A Conceptual Framework. *Online Learning, 23*(2), 145-178.

Han, Y., Zhao, S., & Ng, L. L. (2021). How Technology Tools Impact Writing Performance, Lexical Complexity, and Perceived Self-Regulated Learning Strategies in EFL Academic Writing: A Comparative Study. *Frontiers in Psychology, 12,* 752793.

Heilporn, G., Lakhal, S., & Bélisle, M. (2021). An examination of teachers' strategies to foster student engagement in blended learning in higher education. *International Journal of Educational Technology in Higher Education, 18*(1), 1-25.

Jabarullah, N. H., & Iqbal Hussain, H. (2019). The effectiveness of problem-based learning in technical and vocational education in Malaysia. *Education and Training, 61*(5), 552-567.

Jacob Kola, A., & Sunday, O. S. (2015). A Review of Teachers' Qualifications and Its Implication on Students' Academic Achievement in Nigerian Schools. *International Journal of Educational Research and Information Science, 2*(2), 10-15.

Jin, J., & Snook, B. (2022). Comprehensively strengthening and improving aesthetic education in a new era: An examination of the dance education major at the Beijing dance academy. *International Journal of Chinese Education, 11*(3), 1-13.

Kareem, H. H., Dehham, S. H., & Al-Wahid, M. A. (2019). The impact of teaching the creative writing by FOCUS strategy to develop. *Indian Journal of Public Health, 10*(6).

Karma, I. G. M., Darma, I. K., & Santiana, I. M. A. (2021). Blended Learning is an Educational Innovation and Solution During the COVID-19 Pandemic. *International Research Journal of Engineering, IT & Scientific Research, 7*(1), 1-9.

Keinänen, M., Ursin, J., & Nissinen, K. (2018). How to measure students' innovation competences in higher education: Evaluation of an assessment tool in authentic learning environments. *Studies in Educational Evaluation, 58*, 30-36.

Könings, K. D., de Jong, N., Lohrmann, C., Sumskas, L., Smith, T., O'Connor, S. J., Spanjers, I. A. E., Van Merriënboer, J. J. G., & Czabanowska, K. (2018). Is blended learning and problem-based learning course design suited to develop future public health leaders?. *An explorative European study. Public Health Reviews, 39*(1), 1-12.

Konrad, T., Wiek, A., & Barth, M. (2020). Embracing conflicts for interpersonal competence development in project-based sustainability courses. *International Journal of Sustainability in Higher Education, 21*(1), 76-96.

Kumar, S. P. (2021). Impact of Online Learning Readiness on Students Satisfaction in Higher Educational Institutions. *Journal of Engineering Education Transformations, 34*(0), 64-70.

Kutlu, Ö. (2013). Using Technology for Developing Writing in an ESP Class. *Procedia-Social and Behavioral Sciences, 70*, 267-271.

Li, F., & Li, X. (2020). On the Practice of College English Reading and Writing Course from the Perspective of POA Theory. *Open Journal of Modern Linguistics, 10*(05), 560-568.

Mann, L., Chang, R., Chandrasekaran, S., Coddington, A., Daniel, S., Cook, E., Crossin, E., Cosson, B., Turner, J., Mazzurco, A., Dohaney, J., O'Hanlon, T., Pickering, J., Walker, S., Maclean, F., & Smith, T. D. (2021). From problem-based learning to practice-based education: a framework for shaping future engineers. *European Journal of Engineering Education, 46*(1), 27-47.

Moallem, M., Hung, W., & Dabbagh, N. (2019). *The Wiley handbook of problem-based learning*. Hoboken, USA: John Wiley & Sons.

Niiranen, S. (2021). Supporting the development of students' technological understanding in craft and technology education via the learning-by-doing approach. *International Journal of Technology and Design Education, 31*(1), 81-93.

Pape, L. (2010). Blended Teaching and Learning. *The Education Digest, 76*(2), 22.

Servant-Miklos, V. F. C., Norman, G. R., & Schmidt, H. G. (2019). A Short Intellectual History of Problem-Based Learning. In *The Wiley Handbook of Problem-Based Learning* (pp. 3-24). Hoboken, USA: John Wiley & Sons.

Singh, J., Steele, K., & Singh, L. (2021). Combining the Best of Online and Face-to-Face Learning: Hybrid and Blended Learning Approach for COVID-19, Post Vaccine, & Post-Pandemic World. *Journal of Educational Technology Systems, 50*(2), 140-171.

Singh, N., Bernal, G., Savchenko, D., & Glassman, E. L. (2021). Where to Hide a Stolen Elephant: Leaps in Creative Writing with Multimodal Machine Intelligence. *ACM Transactions on Computer-Human Interaction*. https://doi.org/10.1145/3511599

Smith, H. (2020). *The writing experiment: strategies for innovative creative writing*. Abingdon,UK: Routledge.

Stephenson, T., Fleer, M., Fragkiadaki, G., & Rai, P. (2022). "You Can be Whatever You Want to be!": Transforming Teacher Practices to Support Girls' STEM Engagement. *Early Childhood Education Journal, 50*(8), 1317-1328.

Taradi, S. K., Taradi, M., Radić, K., & Pokrajac, N. (2005). Blending problem-based learning with Web technology positively impacts student learning outcomes in acid-base physiology. *Advances in physiology education, 29*(1), 35-39.

Taylor, C., Kaufman, J., Creative, B. B.-T. J. of, & 2021, undefined. (2019). Measuring creative writing with the storyboard task: The role of effort and story length. *The Journal of Creative Behavior, 55*(2), 476-488.

Tomás, J. M., Gutiérrez, M., Pastor, A. M., & Sancho, P. (2020). Perceived Social Support, School Adaptation and Adolescents' Subjective Well-Being. *Child Indicators Research, 13*(5), 1597-1617.

Turnbull, D., Chugh, R., & Luck, J. (2021). Transitioning to E-Learning during the COVID-19 pandemic: How have Higher Education Institutions responded to the challenge?. *Education and Information Technologies, 26*(5), 6401-6419.

Wahono, B., Lin, P. L., & Chang, C. Y. (2020). Evidence of STEM enactment effectiveness in Asian student learning outcomes. *International Journal of STEM Education, 7*(1), 1-18.

Wang, R., Alazzam, M. B., Alassery, F., Almulihi, A., & White, M. (2021). Innovative Research of Trajectory Prediction Algorithm Based on Deep Learning in Car Network Collision Detection and Early Warning System. *Mobile Information Systems, 2021*, 1-8.

Wickramasinghe, D., & Wickramasinghe, V. (2010). Perceived organisational support, job involvement and turnover intention in lean production in Sri Lanka. *The International Journal of Advanced Manufacturing Technology, 55*(5), 817-830.

Yingfei, Y., Mengze, Z., Zeyu, L., Ki-Hyung, B., Avotra, A. A. R. N., & Nawaz, A. (2021). Green Logistics Performance and Infrastructure on Service Trade and Environment-Measuring Firm's Performance and Service Quality. *Journal of King Saud University-Science, 34*(1), 101683.

Zaman, U., Nadeem, R. D., & Nawaz, S. (2020). Cross-country evidence on project portfolio success in the Asia-Pacific region: Role of CEO transformational leadership, portfolio governance and strategic innovation orientation. *Cogent Business and Management, 7*(1), 1727681.