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Supporting Needed for the Blended Learning Environment of Vocational Students as Perceived by Students Themselves

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ABSTRACT

The objectives of this research were twofold: 1) to investigate students' perceptions of a blended learning environment, and 2) to propose the necessary support to enhance the blended learning environment based on students' perceived perceptions. The research employed quantitative methods with a sample size of 337 students. The primary research instrument used was a questionnaire, yielding quantitative data that included frequency distribution, percentage, average, standard deviation, and content analysis.

The research findings are summarized as follows: In investigating students' perceptions of a blended learning environment among Vocational Students, as perceived by the students themselves, the overall mean score indicated a level of satisfaction. In proposing solutions to problems based on students' perceptions at Zhengzhou Information Technology Vocational College, three aspects were identified e.g., Pedagogical design, which encompassed 10 issues. Social design, which comprised 17 issues. Technical design, which involved 15 issues.

Introduction

The literature surrounding blended learning reflects an evolving instructional paradigm that combines traditional classroom learning with online education platforms. Zeqiri et al. (2021: 79) assert that blended learning has emerged as an innovative approach, gaining popularity, particularly as a form of e-learning during the shift from entirely traditional learning methods to online education. A notable study conducted at Zhengzhou Information Technology Vocational College by the educational management team highlighted concerns regarding the efficacy of classroom teaching and learning. The team discovered that this conventional approach failed to ensure the quality of education and the overall development of students. Notable drawbacks identified included delayed feedback from teachers and issues related to poor internet connectivity within the classroom environment.

The focusing on Students' Perceptions of teaching, delved into reasons for student withdrawals from blended courses (Lumpkin, et al, 2015). It revealed that students identified the lack of reciprocity between traditional and online modes, the absence of printed books for reading and writing, and the use of computers as a primary medium of instruction as major contributing factors. These findings underscore a prevailing negative attitude among students towards the blended learning environment, which is attributed to inadequate design, notably linked to their participation in online discussion forums.

In contrast, several studies have reported positive attitudes among students towards blended learning. However, there is a gap in the literature regarding longitudinal analysis to track the evolution of students' perceptions and the effectiveness of proposed supports over an extended period. Longitudinal studies can offer valuable insights into the sustainability and long-term impact of interventions. The absence of longitudinal analysis that stat to addressing these gaps in future research endeavours will not only refine the understanding of vocational students' perceptions in blended learning environments but also contribute to the development of targeted and sustainable support strategies to enhance the overall learning experience. These positive perceptions are often linked to the features of flexibility, convenience, reduced travel time. However, it is crucial to note that the literature also presents divergent views, with certain studies reporting negative perceptions of the blended learning environment. These conflicting findings emphasize the nuanced nature of student attitudes towards blended learning, prompting a deeper exploration of the factors influencing these varying perspectives.

Literature Review and Theoretical Framework

Blended learning, an instructional approach combining traditional classroom methods with online learning, has gained prominence in recent years. A growing body of literature explores various aspects of blended learning, addressing its implementation, effectiveness, and impact on student outcomes. However, a critical examination of the existing literature reveals a gap concerning the specific support needed for the blended learning environment, especially from the perspective of vocational students.

Blended Learning in Educational Settings

Early literature on blended learning establishes its roots in addressing the limitations of both traditional and fully online educational models. Researchers such as Akyol, et al, (2009) emphasize the importance of a balanced integration of face-to-face and online interactions. Blended learning, they argue, offers the flexibility of online resources while maintaining the benefits of in-person engagement.

Vocational Education and Blended Learning

Studies specific to vocational education in a blended learning context are relatively limited. The works of Joyner (2021) delve into the application of blended learning in vocational settings, emphasizing its potential to enhance practical skills and industry relevance. However, a gap remains in understanding the nuanced needs and perceptions of vocational students regarding blended learning support.

Student Perceptions in Blended Learning

The literature on student perceptions in blended learning primarily focuses on satisfaction, engagement, and challenges faced by students. Research by Picciano (2009) and Means et al. (2010) provides insights into general student perspectives, but there is a lack of specificity regarding vocational students' unique needs and perceptions in the blended learning environment.

Challenges and Drawbacks in Blended Learning

Studies such as Graham (2006) and Dziuban et al. (2015) acknowledge challenges associated with blended learning, including issues with technology, faculty readiness, and student engagement. However, the specific challenges faced by vocational students, as well as the support mechanisms required to address these challenges, remain underexplored.

Theoretical Framework

The theoretical framework for this study draws on the Community of Inquiry (CoI) model developed by Garrison, Anderson, and Archer (2001). This model provides a comprehensive lens for understanding and enhancing the blended learning environment, particularly in the context of investigating students' perceptions and proposing solutions to challenges faced by vocational students at Zhengzhou Information Technology Vocational College.

Pedagogical design: Investigating Students' Perceptions: Within the CoI model, cognitive presence refers to the extent to which students can construct meaning through sustained reflection and discourse. In investigating students' perceptions of a blended learning environment, the cognitive presence aspect involves exploring how vocational students engage with course content, critically reflect on their learning experiences, and comprehend the relevance of theoretical concepts to practical applications.

Proposing Solutions to Problems: To address challenges identified in students' perceptions, the cognitive presence aspect involves proposing solutions that enhance the intellectual engagement of vocational students. This may include optimizing instructional design to cater to practical skill development, integrating real-world scenarios into the curriculum, and fostering critical thinking through reflective activities.

Social Design: Investigating Students' Perceptions: Social presence in the CoI model emphasizes the importance of interpersonal relationships and a supportive learning community. In the investigation of students' perceptions, this aspect involves understanding how vocational students experience and contribute to a sense of community in the blended learning environment. Proposing Solutions to Problems: To address challenges related to social aspects, proposed solutions focus on enhancing social presence. This may involve strategies to facilitate peer interactions, collaborative projects, and the establishment of online communities. Support mechanisms could include discussion forums, virtual teamwork, and peer feedback to foster a sense of belonging and support among vocational students.

Technical design: Investigating Students' Perceptions: Teaching presence encompasses the design, facilitation, and direction of the educational experience. In investigating students' perceptions, this involves examining how instructors in the blended learning environment guide and facilitate learning, provide feedback, and create a supportive instructional design. Proposing Solutions to Problems: To address challenges associated with teaching presence, proposed solutions focus on improving instructional design and instructor support. This includes refining course materials, ensuring timely and constructive feedback, and enhancing the technological competence of instructors. Effective teaching presence contributes to a positive learning experience and addresses specific concerns raised by vocational students.

By applying the CoI model, this theoretical framework provides a structured approach to understanding and improving the blended learning environment for vocational students. It offers a lens through which to investigate students' perceptions and propose targeted solutions, emphasizing the interconnectedness of cognitive, social, and teaching presences in the learning experience.

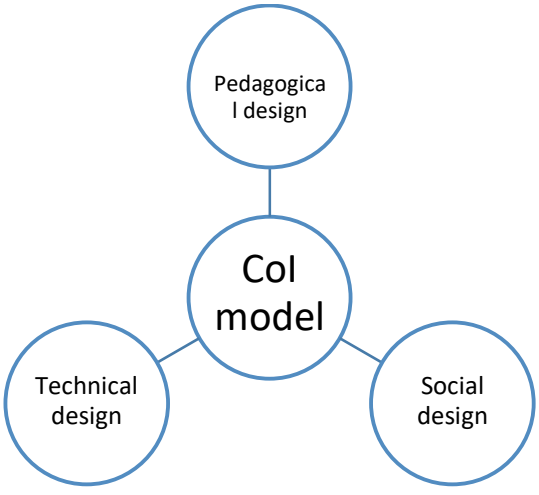

Figure 1 The theoretical framework based on the Community of Inquiry (CoI) Model

Objective

1. To investigate students' perceptions of a blended learning environment.

2 To propose the supporting needed to improve the blended learning environment according to the perceptions perceived by students.

Research Methodology

This research used a quantitative research approach— uses the sample to study, were 377 students of Zhengzhou Information Technology Vocational College in Jinshui District, Zhengzhou City, Henan Province, analysis, questionnaires were used to collect data. The descriptive statistics used to analyze the data collected consisted of frequency, percentage, mean, and standard deviation

Research scope: Scope of content is Students' Perception of the Blended Learning Environment as (1) Pedagogical design, (2) Social design, (3) Technical design. Scope of area: The Zhengzhou Information Technology Vocational College in Jinshui District, Zhengzhou City. Scope of time: January – August 2023. Scope of population: The population used in the research was 6,000 students

Result

1. The Investigate students' perceptions of a blended learning environment of Vocational Students as Perceived by Students Themselves.

The analysis of the Investigate students' perceptions of a blended learning environment of Vocational Students as Perceived by Students Themselves obtained from the analysis are presented in the table 1

Table 1 Mean, standard deviation of the Investigate students' perceptions of a blended learning environment of Vocational Students as Perceived by Students Themselves from the overall analysis.

n= 377

Students' Perceptions of the Environment	$\bar{x}$	S.D.	described
1. Pedagogical design	4.06	0.78	Satisfied
2. Social design	4.11	0.73	Satisfied
3. Technical design	4.04	0.70	Satisfied
Total	**4.07**	**0.73**	Satisfied

Table 4.2 show that As Investigate students' perceptions of a blended learning environment of Vocational Students as Perceived by Students Themselves , the overall mean score was at Satisfied ($\bar{x}$=4.07, S.D.= 0.73), which students' perceptions of a blended learning environment supported by a positive attitude toward were generally satisfied with the Social design, pedagogical design and Technical design mean score higher to lower ($\bar{x}$=4.11, S.D.= 0.73), ($\bar{x}$=4.06, S.D.= 0.78),and ($\bar{x}$=4.04, S.D.= 0.70) respect.

2. The propose solutions to problems according to the perceptions perceived by students of Zhengzhou Information Technology Vocational College

2.1 Pedagogical design

The propose solutions to problems according to the perceptions perceived by students also suggested that students were satisfied with the Pedagogical design

2.1.1 Student-Centered Approach
2.1.2 Clear Learning Objectives
2.1.3 Varied Instructional Methods
2.1.4 Feedback and Assessment
2.1.5 Inclusive Learning Environment
2.1.6 Flexibility and Differentiation
2.1.7 Technology Integration
2.1.8 Real-World Application
2.1.9 Reflection and Metacognition
2.1.10 Community Engagement

2.2 Social design

The propose solutions to problems according to the perceptions perceived by students also suggested that students were satisfied with the Social design

2.2.1 Students' perception of social design can vary widely depending on their exposure to and understanding of the field.

2.2.2 Students' perception of social designs., for example, students with a strong commitment to social justice may view social design as a powerful tool for positive change.

2.2.3 Societal issues and create positive social impact through design interventions.

2.2.4 Some students may have a clear understanding of social design and appreciate its significance in addressing complex social problems.

2.2.5 Recognize that design can go beyond aesthetics and functionality to address issues like poverty, inequality, healthcare, education, and environmental sustainability.

2.2.6 Many students may view social design as a way to empower communities and individuals.

2.2.7 To actively participate in shaping their own environments and solutions, rather than being passive recipients of design decisions.

2.2.8 Students may perceive social design as an interdisciplinary field that draws on various disciplines such as design, anthropology, sociology, psychology, and more.

2.2.9 Some students may value the holistic and collaborative nature of social design projects, which often require input from multiple stakeholders.

2.2.10 Some students may play a significant role in students' perception of social design.

2.2.11 Some students may appreciate that designers working in this field need to be conscious of the potential impacts, both positive and negative, that their interventions can have on communities and individuals.

2.2.12 Some students may view social design as a ethical responsibilities. They may see social design as a way to rectify this imbalance.

2.2.13 Exposure to real-world case studies and hands-on experiences in social design projects can greatly influence students' perception.

2.2.14 Positive experiences can lead to a deeper appreciation for the field, while challenges and limitations encountered in projects may lead to a more nuanced understanding.

2.2.15 Some students may approach social design with skepticism—may question the effectiveness of design interventions in addressing complex social issues and may be critical of potential unintended consequences.

2.2.16 Students may differ in their views on whether social design primarily aims for long-term systemic change or if it also encompasses shorter-term, more immediate solutions to pressing social problems.

2.2.17 Students may emphasize the importance of cultural sensitivity and a deep understanding of local contexts in social design projects.

2.3. Technical design

The students' perceptions of a blended learning environment was at satisfied which theme's suggestions for technical design

2.3.1 Shall to provide valuable insights into how they perceive and approach

2.3.2 Creating user personas, and gathering feedback to ensure that the final product meets the needs and preferences of the intended audience.

2.3.3 Students may recommend a prototyping approach, where designers create mock-ups or working models of the product to test functionality, gather feedback, and make iterative improvements.

2.3.4 Students may suggest that ethical considerations should be an integral part of technical design.

2.3.5 Involve thinking about privacy, security, data protection, and potential societal impacts of the technology.

2.3.6 Students might emphasize the need to design products and systems with sustainability in mind.

2.3.7 Involve using eco-friendly materials, optimizing energy consumption, and considering the product's life cycle and disposal.

2.3.8 Encourage using flexible architectures or platforms that can adapt to new technologies or requirements.

2.3.9 Students may suggest considering the integration of emerging technologies like AI, IOT (Internet of Things), block chain to enhance the functionality and user experience of the product.

2.3.10 Students may advocate for collaboration between designers, engineers, programmers, and experts from various fields to ensure a well-rounded technical design.

2.3.11 Involve interdisciplinary workshops or collaborative projects.

2.3.12 An awareness of the dynamic nature of technology.

2.3.13 Involve building in mechanisms for updates, patches, or adaptations to new technologies as they emerge.

2.3.14 Optimizing the design to make efficient use of resources, both in terms of materials and development time.

2.3.15 Involve considering cost-effective alternatives and avoiding unnecessary complexities.

Discussion

Based on the research result there are 2 important issue as follows;

1. The investigate students' perceptions of a blended learning environment of Vocational Students as Perceived by Students Themselves, found that the overall mean score was at Satisfied, which students' perceptions of a blended learning environment supported by a positive attitude toward were generally satisfied mean score the highest with the Social design at very Satisfied 2 item such as (1) "Other students respond promptly to my requests for help" and (2) "Teachers give me quick comments on my work"—maybe it's because In designing interaction and collaboration-rich community, the strategies were applied to target both student-student and student-teacher communities. In terms of student-student community, students were grouped according to their levels and the requirements of the activities. Specifically, in a demanding task, students of different academic levels were grouped to ensure the implementation. In a relatively free discussion, students were grouped according to their own will so that they could feel more comfortable sharing their ideas. As for the student - teacher community, the student-teacher communication was facilitated through various forms of teacher-student interaction, such as teachers' feedback, office hour, and communications on the lesson question. The result accordance with the research of Zeqiri (2021: 79-94) The research on "Blended Learning and Student Satisfaction: The Moderating Effect of Student Performance" which show that blended learning influences students' performance and satisfaction. Conclusions: Course management and interaction positively impact students' satisfaction and performance. The interaction has a more significant effect on both satisfaction and performance outcomes from blended learning. The main conclusion is that blended learning contributes to students' satisfaction which eventually leads to students' improved performance. While the mean score was at the lowest which students' perceptions of a blended learning environment was at satisfied—"I can ask my teacher what I do not

understand" indicating students' generally positive attitude toward the social design. So Blended learning is a learning process that combines face-to-face learning and online learning. Before implementing blended learning in vocational education According to Krismadinata et. al. (2020: 5801- 5815) This article aims to examine and provide an explanation of the blended learning model in vocational education. The results show that blended learning influences students' performance and satisfaction. Conclusions: Course management and interaction positively impact students' satisfaction and performance. The interaction has a more significant effect on both satisfaction and performance outcomes from blended learning. The main conclusion is that blended learning contributes to students' satisfaction which eventually leads to students' improved performance.

2. Investigate students' perceptions of a blended learning environment of Vocational Students as Perceived by Students Themselves in Pedagogical design, the overall mean score was at Satisfied which students' perceptions of a blended learning environment supported by a positive attitude toward the social design mean score was at very Satisfied 2 Item such as (1) Activities are carefully planned) and (2) Learning objectives are clearly stated in each lesson. while the mean score was at the lowest which students' perceptions of a blended learning environment was at satisfied — "The structure of the environment helps me focus on learning" indicating the specific strategies of pedagogical design are listed in this research result when designing the learning objectives of the activities, the basic concepts and frameworks of critical thinking were introduced to the students, making them aware of its meaning and significace. Furthermore, students were informed of the thinking skills targeted and their importance. When students associated the thinking skills with the tasks, they would try to use the skills to accomplish them. According Mulyadi (2019: 26-27) was to study the Students' Perceptions of Blended Learning in Mastering English for Specific Purposes the blended learning has proliferated in recent years to integrate ICT into ESP instruction. Thus, ESP teachers have to acclimatize the feasibility of the advancement in facilitating English instruction for ESP learners. To this end, the present study assayed the ESP students' perceptions toward the blended learning in mastering English for specific purposes. In the present study, the qualitative approaches were employed based on the questionnaire data. The data gathered from the questionnaire was gauged by descriptive analyses that utilized SPSS 21. The results show that most students get satisfied and enthusiastic to have blended learning of ESP course. However, the classroom interaction by using English and time management skills should be taken into deep concern by English teachers for developing the ESP blended learning course.

3. In addition for an investigate students' perceptions of a blended learning environment of Vocational Students as Perceived by Students Themselves in technical design, overall the average score is at Satisfied, which students' perceptions of a blended learning environment provided relatively sufficient technological support to the students got Very Satisfied 2 Item such as (1)The online material is available at locations suitable for me and (2) I decide when I want to learn, while the mean score was at the lowest which students' perceptions of a blended learning environment was at satisfied — "I am allowed to work at my own speed to achieve my learning objectives" which indicates that students could enjoy the convenience of "anywhere" and "anytime" in the learning environment. The blended learning environment play an important role in exploring areas of student's interest that students would perceive the learning environment positively if the elements of the blended learning

environment are carefully designed. Despite the generally positive attitudes toward the learning environment, which accordance with Wang Qiyun (2018: 451- 462) The research on "Pedagogical, Social and Technical Designs of a Blended Synchronous Learning Environment". In this study, a blended synchronous learning environment (BSLE) was designed from pedagogical, social and technical perspectives. It was created for a group of master's students to attend lessons in the classroom and at the same time allow a few of them to join the identical sessions using video conferencing from different sites. The purpose of the study was to describe the guiding principles for pedagogical, social and technical designs and specific strategies applied, and identify the students' learning experiences and perceptions of the environment. Results showed that the BSLE could extend certain features of classroom instruction to the online students and they had equivalent learning experiences. They also liked the flexibility and convenience of attending lessons via video conferencing. This study further found that smooth and clear audio communication, redesign of certain learning activities and the quality of audio were crucial for the BSLE to be useful in practice.

Conclusion

This research result which are teacher development a blended learning environment management as for the promoting factors of the development the students recognized the importance of learning environment design, especially the pedagogical design and the social design. For example, students attributed their deeper understanding. Personalized Learning: Students can go at their own pace when reviewing the pre-class materials— allows for a more individualized learning experience. Opportunity for Differentiated Instruction: Teachers can tailor them in-class instruction to address specific needs and interests of students. Student-centered learning includes: Individualized Learning: Recognizing that every student is unique, this approach seeks to tailor instruction to meet each student's specific learning style, pace, and interests. Active Participation: Students are encouraged to actively engage with the material, ask questions, and seek deeper understanding. Critical Thinking and Problem-Solving: It emphasizes the development of higher-order thinking skills, such as critical thinking, problem-solving, and analysis. In addition, collaboration and communication: Students often work in groups or pairs, promoting collaboration, discussion, and the sharing of ideas.

Recommendations

1.For the future research should further explore to Investigation: Students' Critical Thinking for Enhance Critical Thinking Abilities in the 21th Century.

2. The development of academic management focus on learning management structures for promote students' learning.

3. Explore the blended learning environment in Social design toward students' perceptions

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