

A Study of Blended Learning Student Engagement and Teacher Teaching Strategies

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ABSTRACT

Student engagement in learning is a concern for teachers in the implementation of blended learning, which reflects the effectiveness of the pedagogical measures taken by teachers. Blended learning encompasses traditional blended, blended online, and blended synchronous, which combine synchronous and asynchronous teaching and learning activities. This paper adopts an inductive approach to investigate and analyse students' engagement in learning from three dimensions: behavioural, affective and cognitive, specifically focusing on three meta-categories, namely, course structure and arrangement, choice of teaching and learning activities, and teacher's role in relation to the course, to investigate the teaching of teachers of different disciplines in three vocational colleges and to analyse the pedagogical strategies that the teachers use in order to improve students' engagement in blended learning. The findings suggest that communicating about the course at the beginning of the semester, clarifying course requirements, and building a trusting relationship with students play a key role in increasing student engagement in blended learning, and that the use of digital tools is an important means of promoting students' behavioural and emotional active participation in learning.

1. Introduction

Student engagement in teaching and learning has received a great deal of attention over the past decade or so as a key component of the demonstrated effectiveness of teaching and learning activities in higher education. Learning engagement has a significant impact on perseverance, deep learning, and academic outcomes. Student engagement in learning is in turn influenced by situational changes. Therefore, it is of great relevance to examine how teachers can improve student engagement in a given learning environment. Blended learning is a fusion of face-to-face learning and online learning. It has the

convenience of synchronous communication and the flexibility of online activities, is closely related to the wide application of digital technology in education, and has a positive effect on improving student learning engagement, a model that is becoming increasingly popular in higher education. Although a number of studies have suggested increasing student engagement in blended learning, few studies have focused on how students can self-improve their engagement and how teachers can improve student engagement through teaching strategies. Therefore, it is necessary to study the issue of how teachers improve students' learning engagement in the teaching process. Based on the findings, this paper focuses on analysing how

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teachers in vocational colleges and universities use teaching strategies to increase student engagement in blended learning.

2. Literature Review

2.1 Conceptual overview

2.1.1 Student engagement

Student engagement, which is considered a complex and multifaceted pedagogical indicator, is rooted in actions, including the amount of time and energy students invest in the learning process, among others. Scholars have defined student engagement as three interrelated dimensions - behavioural, affective and cognitive. In a course, student behavioural engagement refers to their participation in activities and adherence to rules or norms, student affective engagement (which can also be referred to as emotional engagement) refers to students' emotional responses to activities, peers, and instructors as well as their sense of belonging to the course, and student cognitive engagement. 'Engaged students are more than just participating in learning activities or demonstrating learning outcomes, but also include behaviours in which they work hard and persistently self-regulate towards goals, challenge and exceed themselves, and enjoy challenge and learning'

2.1.2 Blended Learning

Blended learning mixes synchronous and asynchronous teaching activities, face-to-face teaching and online teaching in one, which combines both the advantages of synchronous interaction and the flexibility of online learning in terms of time, location and even learning pace. Blended learning models have partially replaced face-to-face learning activities. Three common types of blended learning are traditional blended, blended online and blended synchronous. Traditional blended learning combines face-to-face and asynchronous online training and learning activities; blended online learning combines synchronous and asynchronous online training and learning activities; and blended synchronous learning combines asynchronous online and synchronous face-to-face and online activities for both on-campus and distance students.

2.1.3 Student Engagement in Blended Learning

Through the combination of asynchronous and synchronous learning modes, blended learning combines a variety of teaching and learning activities to promote differentiated and personalised teaching and learning. It combines the strengths of synchronous and asynchronous com-

munication, aims to 'extend thinking and discourse over time and space' and is 'specifically designed to enhance (student) engagement' (Vaughan et al., 2013)³, and uses digital technology to reinforce and highlight learner-centredness. Therefore, many researchers consider blended learning to be a fertile ground for optimising student engagement. Halverson et al. were early to mention the term 'engagement' in their literature review, but did not provide a specific definition. The term 'engagement' is often used in research on blended learning (Halverson et al., 2014).⁴ However, there is very little literature devoted to the study of student engagement in blended learning, and most of the studies focus on a particular aspect of it, such as Liu Guimei's 'Western Culture Course as an Example of the Blended Learning Model'. A Study of Online Learning Engagement of Higher Vocational Students' (Liu Guimei, 2016)⁵; or a certain aspect of students' engagement in learning activities, such as Jiang Li's proposal to use teaching strategies to guide the design of teaching activities and teaching activities to promote students' active participation in blended learning. Therefore, it is essential to study students' engagement in blended learning.

2.2 Literature review

Student engagement can be extended through pedagogy, which is influenced by the instructor's teaching strategies, such as the instructor's encouragement of student participation in their course. Teachers first provide students with a variety of learning resources (e.g., texts, videos) through asynchronous online delivery to increase student engagement. In subsequent synchronous instruction, students continued to remain engaged through active instructional collaboration. Finally, the authors emphasised the importance of student interaction in promoting student engagement. In another study, scholars investigated how instructors of a traditional blended business course, which included both face-to-face and asynchronous online modes, increased undergraduate student engagement. The results of the study showed that student learning engagement was better in face-to-face instruction than in asynchronous online instruction. Some faculty also monitored student engagement online by submitting assignments or through private emails to engage students in learning activities. Despite these initiatives, teachers' strategies to increase student engagement were superior to the online model in face-to-face instruction. The study concludes that increasing student engagement requires teachers to integrate a variety of asynchronous and synchronous activities to fully realise the potential of blended learning.

3. Research design

3.1 Formulation of the research question

Few studies have been conducted specifically on vocational students' learning engagement in blended learning, and even fewer of these studies have investigated how teachers use instructional strategies to increase student engagement. The research findings presented above pave the way for research on this topic, in which investigations into the application of teacher strategies were either not extensive (e.g., digital technology applications), or limited to within a particular course. In addition, almost all of these studies involved undergraduate courses in traditional blended learning, and not many studies related to vocational college courses and students in blended learning, especially in blended online or blended synchronous courses, where the issue of how to increase vocational college students' engagement in learning remains to be investigated. How teachers in vocational colleges and universities can improve students' learning engagement through teaching strategies in a blended environment has also not yet been studied.

3.2 Research Objectives

In order to understand how teachers in vocational colleges and universities use teaching strategies to improve students' learning engagement in a blended environment.

pedagogical strategies to improve students' learning engagement, teachers from several different majors and different institutions were selected to participate in this study. The participants were selected as purposeful and targeted teachers (professors or lecturers). Twelve teachers participated in this survey, six of each gender. They had between 5 and 23 years of teaching experience and taught courses in a variety of disciplines, ranging from humanities (e.g., Chinese education, English education, marketing, etc.) to engineering (e.g., big data applications, computers, etc.) sciences. Teachers

Numbered P1 to P12.

3.3 Research Content

The influence of course structure and progression, choice of teaching and learning activities, teacher role and course relationship on the behavioural, affective and cognitive dimensions of students' learning engagement.

3.4 Research Method

This study mainly uses the questionnaire survey method, and the data obtained from the questionnaire survey will be analysed to reveal which teaching strategies are

more effective in improving vocational college students' learning engagement in blended learning.

3.4.1 Data collection

The participating instructors administered the questionnaire primarily around a course they teach in a blended environment. In the questionnaire, participants were first asked to explain how their course was organised, aiming to gather initial information about the sequence of synchronous and asynchronous activities. Next, the questionnaire was designed with respect to the three dimensions involved in student engagement in learning (behavioural, affective and cognitive) and participants were asked to relate their answers to these dimensions as much as possible. They were asked to talk about course situations where they noticed high levels of student engagement in any of the three dimensions and what they did to develop or maintain it; they were also asked to talk about situations where they noticed low levels of student engagement in any of the three dimensions and what they did to re-engage students. In order to maintain an objective and neutral position, the questionnaire was designed to ask questions using open-ended questions to get more details from the participants.

3.4.2 Data Analysis

After the collection of materials, the survey content was analysed and categorised and coded through a general elicitation approach. Tomas coding steps were used: initial reading of the text, identification of data segments relevant to the objectives, labelling of data segments into emergent categories, refinement of categories to avoid redundancy, and highlighting of salient categories. Throughout the coding process, codes were proofread, refined and layered to minimise redundancy and overlap (Tomas, 2006).⁹ Each code was further refined and categorised into categories of teacher strategies. The strategy categories are associated with students' behavioural, affective, and cognitive inputs.

4. Analysis and Discussion of Results

4.1 Analysis of results

After in-depth data analysis, it was found that there are three meta-categories of teacher strategies to increase student learning engagement in a blended learning environment: course structure and progression, choice of teaching and learning activities, and teacher role and course relationship.

4.1.1 Course Structure and Pacing

Blended learning implies that students switch modes

between synchronous (face-to-face or online) and asynchronous modes, and therefore most teachers emphasise course structure and pacing as the key to increasing student engagement in learning. Firstly, most teachers developed students' behaviours and emotions by providing a clear, continuous and consistent lesson structure. It involves when, what and where instructional activities are completed (face-to-face, synchronous online or asynchronous online). 'At the beginning of each semester, in the first class, I will arrange a face-to-face offline session on this course to give students a detailed explanation of how the course is structured throughout the semester, which makes it easier for students to understand in advance what the course is scheduled to cover and what is required for them to learn. When students understand a clear programme for the whole semester, they will have clarity of purpose without anxiety and restlessness' (P1).

Most teachers also increased students' engagement in learning by making connections between asynchronous and synchronous activities and clearly emphasising their interrelationships. They often complement asynchronous teaching activities with synchronous teaching (face-to-face or online). In this way, students become aware of the necessary role of synchronous engagement. This in turn creates a positive emotional response to asynchronous teaching and learning activities, thus promoting behavioural and emotional engagement. An explicit schedule of synchronous teaching activities may facilitate students' active reinforcement of what they have been taught in previous asynchronous activities, helping them to deepen their understanding of the course content and stimulating their cognitive engagement. 'When appropriate in synchronous teaching, students are asked to review important course content that they have learnt in previous asynchrony and to highlight the importance of this teaching content; I think this is very helpful in reinforcing students' knowledge and the feedback from the students corroborates this' (P10). Some teachers would assign pre-class preview content before synchronous teaching to increase students' interest in participating in teaching activities during synchronous teaching, thus generating affective engagement. After synchronous instruction, some teachers encourage student engagement by assigning asynchronous homework. The post-lesson assignments continued to deepen students' understanding of the content and deepened their knowledge of the interconnections between synchronous and asynchronous instructional activities. Most teachers emphasised that maintaining consistency of teaching and learning activities throughout the semester could contribute to increased student engagement in learning.

Ensuring coherent scheduling throughout the course,

whether teaching synchronously or asynchronously, stimulates student engagement. In the asynchronous mode of teaching, teachers help students to maintain a consistent pace of learning throughout the semester through a diverse set of activities throughout the course in order to develop their behavioural and affective habits. 'It is important to design each instructional activity in such a way that it is deeply related to the content, but also to ensure that each activity is designed differently so that it continues to hold students' attention and avoids interest fatigue' (P9). The teacher further explained that such activity design facilitates students' overview of the content while balancing the activities throughout the semester. Teachers can also promote student engagement by carefully structuring synchronous (face-to-face or online) teaching activities to avoid disjointedness and maintain a high level of interaction. This produces a positive emotional response to increasing students' engagement in learning, which in turn promotes their behavioural and emotional engagement.

4.1.2 Choice of teaching and learning activities

Whether synchronous or asynchronous, teachers can enhance students' engagement in learning by orchestrating active or interactive teaching and learning activities. In the asynchronous mode of teaching, most teachers reported that they would promote student engagement through the use of supporting digital tools (e.g. slides, interactive videos, learning-based game design, online quizzes, discussion forums, etc.) in order to stimulate student participation and capture students' attention. 'I designed a game with the vocabulary word 'connect the dots'. This is a small game that students like to play. They gave feedback that through the vocabulary word 'connect-the-dots' game can help them to recognise and review what they have learnt quickly, easily and interestingly, which is one of the reasons why students like to participate' (P6). In teaching vocational college courses, most teachers also frequently use online assessments (e.g., online quizzes) to ensure that students remain active in asynchronous environments, thus stimulating their engagement behaviours. In addition, most instructors also assess students' learning outcomes longitudinally over the course of the semester so that students continue to improve as they deepen their understanding of the content. Summative learning reports promote student engagement, while longitudinal assessment and continuous feedback from teachers stimulate students' engagement mentality, thus enhancing their behavioural and cognitive engagement.

In synchronous teaching, most teachers emphasised that facilitating active learning enhances behavioural engagement. Depending on the course content, teacher

facilitation behaviours include problem-solving oriented activities, case studies, role plays or team discussions. When appropriate, teachers can enhance students' engagement in learning by arranging debate activities among students. For example, if students discuss a topic or work on a case study in a group, conducting group discussion activities will stimulate behavioural engagement. When groups share their findings, it may lead to inter-group debates, which in turn promote students' cognitive engagement. Several teachers also used the interactive application 'Shake' randomly selected on the SuperStar Learning Access program to increase student engagement and attention during synchronous teaching and to develop participatory behaviours. 'I have noticed that students are more attentive when I use the 'Shake It' randomly selected interactive app. Every student has the possibility of being selected, unlike simply having a student initiate the answer by raising their hand. This digital tool of random selection with uncertainty is interesting and students find it fun and exciting' (P8).

'Often, hot social or internet topics spark debates, and both students who participate in online and face-to-face classes are very engaged. Each student has his or her own ideas about hot topics. Teachers need to make sure that every student speaks up so that they can keep motivating students to participate. I think this hot topic debate makes the lesson more dynamic' (P2).

One teacher also noted that he used different topics to better engage different students in his lessons, explaining that topics or questions that made students feel uneasy also stimulated participation. Most teachers used lesson content to stimulate student behaviour by integrating and experiencing to deepen learning in synchronous and asynchronous instruction, and the integration and deepening of content facilitated their cognitive engagement.

'I typically preset pre-lesson topic discussions through asynchronous online before the lesson, and then arrange for students to share their ideas or discuss them further among classmates during the lesson, and finally the whole class examines the relatively focused ideas under the guidance of the teacher. The goal of engaging students through this sharing of ideas or common discussion is achieved' (P5).

'I would tell students that the learning of the course is their own business, that the teacher is only a guide to the course content, and that they need to develop personalised learning objectives that take into account their individual learning habits. Emotionally, this is a way of engaging students in active participation. In addition, I would place special emphasis on the importance of the course to their future careers, cognitively pushing them to think in terms

of specific real-life situations. And such an approach will motivate students to take action' (P8).

When appropriate, teachers providing selective topics, resources, or assignments can also promote student engagement. Several teachers indicated that allowing students the freedom to choose their favourite topics for discussion or assignments from predetermined content enhances their affective and cognitive engagement.

'I leave students with some choice in the selection of topics and assignments in my classroom, and they can select 1-2 topics of great interest from the range of topics I have set aside through independent discussion. In this way the whole class will actively participate because they experience the feeling that they are the masters of the class' (P9).

3. Teacher Roles and Curriculum Relationships

All teachers emphasised that students' enthusiasm for participation is stimulated if they are guided and supported from the beginning of the school year to the end of the term, whether in groups, teams or individually. Whether teaching synchronously or asynchronously, clear teacher disclosure of the course schedule, goals and expectations to students at the beginning of the semester can stimulate behavioural and emotional engagement in advance.

'In the first lesson of the school year, I show my students the semester plan and schedule for the course. Explaining to them in detail each of the course schedule's aspect of the course' (P11).

Clearly informing students about how the course is organised in blended learning, whether synchronous or asynchronous activities, encourages their behavioural and emotional engagement. Particularly in vocational education courses, several teachers indicated that they needed to spend one or two synchronous sessions to clearly explain the course structure, arrangement and interactions in order to promote students' emotional and behavioural engagement. Clear communication between teachers and students at the beginning of the school year would reduce anxiety and negative emotional responses and could increase students' motivation to engage in activities.

'Sometimes I would spend a lot of energy explaining how these course activities will be organised, and based on the learning characteristics of vocational students who do not have a high level of concentration, this arrangement needs to be more detailed and sometimes repeated, as students may miss some important information and feel anxious, so it is essential to take the time and energy to communicate the course arrangements to the students of the programme' (P6).

From the beginning of the term, teachers can also

increase students' emotional engagement by building a trusting relationship between teachers and students. 'More often than not, we are more like elders or older siblings to our students, and the establishment of this trusting relationship facilitates all teaching and learning activities because students can feel comfortable entrusting learning-related matters to someone they can trust' (P4). Most of the teachers used ice-breaking activities in synchronous teaching to develop students' sense of belonging to the course, thus increasing students' emotional engagement. Some teachers invited students to share personal examples of course-related practice in class and reused and presented students' experiences in subsequent synchronicities with a view to gaining students' trust. Personalised contact between students and teachers throughout the semester may also increase student engagement in the course. Some instructors enhance students' sense of group belonging and psychological engagement by inviting them to assist in participating in commenting on other students' work, thereby increasing their affective and cognitive engagement. 'Assisting the teacher and participating in commenting on peers allows students to recognise that they are part of the class' (P6). Teachers guiding students throughout the semester, both synchronously and asynchronously, promotes their engagement in the course. Teachers' clear explanations of the objectives of asynchronous and synchronous activities can stimulate students' engagement and thus their participatory behaviour. 'For each course module, I identify specific learning objectives and skills to be mastered, specify how we will achieve them, and then ask students to be actively involved' (P7).

Asynchronous communication (e.g. emails or messages on the course platform) to remind assignments of deadlines or important subject matter can similarly stimulate student behaviour and interest and emotional engagement. It helps students to complete important activities while highlighting the teacher's care and concern, making students feel warm and fuzzy. Several teachers felt that minimising distance, for example by sending special audio and video resources to students at irregular intervals, increased students' engagement in teaching and learning. Some teachers felt that providing additional short news items to stimulate students' interest could stimulate emotional engagement. 'In the social media groups set up by the students, I would share topics from time to time and tell the students that it was relevant to the class content and would be discussed in the classroom; sometimes I would also send out group notifications to remind them of relevant learning content or assignments. These very simple actions are welcomed by students and they feel cared for and supported by the teacher' (P9).

Teachers can encourage students' cognitive engagement by asking questions to reorganise or restart the discussion in an asynchronous or synchronous manner. In addition to answering questions, students' cognitive engagement can be facilitated by stimulating discussion or reflection. 'I would say to students 'Imagine how you would handle this situation if it happened to you'. I would challenge students and motivate them to solve problems' (P5). Several teachers also mentioned that they stimulate students' behavioural and cognitive engagement in their own lessons, e.g. assessment or feedback appropriately tailored to a particular activity in an asynchronous or synchronous situation can increase students' cognitive engagement. Some teachers mentioned that giving positive feedback to the whole group can also increase students' emotional engagement. In terms of individual feedback, some teachers provided audio or video feedback to increase student emotional engagement. 'In terms of student engagement, the importance of feedback is that they understand what the outcome was and why it was the way it was' (P3). In addition, students with specific difficulties need to be provided with additional and personalised support to promote their emotional engagement and help them to get through the term successfully. Some students may experience severe difficulties. 'If necessary, I make a private appointment with them to meet to resolve the problem, or multiple appointments if I can't resolve it once' (P7). Whether synchronously online, face-to-face, or sometimes online asynchronously (via email), students were keen to be helped. They feel supported by their teachers and it makes them feel at ease.

4.2 Discussion of results

This study aims to present a comprehensive and broad picture of the teaching strategies used by teachers in vocational education to increase student engagement in blended learning. Three different vocational colleges with different majors in different blended learning environments were investigated to examine the strategies used by teachers in synchronous or asynchronous teaching to increase students' engagement in learning, which were related to the dimensions of students' engagement in learning (behavioural, affective, and cognitive) as much as possible. The study explores this in detail from an external perspective (course structure and pacing) to an internal perspective (teachers' roles and course relationships).

4.2.1 Lesson Structure and Pacing

From an external perspective, ensuring that blended learning courses are well structured and paced is key to increasing student engagement in learning. This is con-

sistent with McGee and Reis' findings that a clear course structure improves students' behavioural and emotional engagement (McGee, Reis, 2012)¹]. Based on blended learning with synchronous and asynchronous teaching and learning activities, this study identifies specific strategies for teachers to increase student engagement in learning, for example, by designing synchronous teaching and learning activities (face-to-face or online) to unify the course structure. These can be complementary to asynchronous teaching activities, making clear the strong link between the two parts of teaching and maintaining continuity throughout the semester. In response, some faculty who lacked experience with blended learning expressed unease about students learning in asynchronous online modes while their courses exhibited a lack of connection and continuity between asynchronous and synchronous modes. Experienced teachers, on the other hand, generally make full use of both modes to adapt and fully exploit the potential of blended learning. As Bruggeman et al. suggest, it is important for teachers to fully understand what a blended learning model is, to invest time in experimenting and reflecting on their course models and to seek professional guidance and support (Bruggeman et al., 2021)⁷.

The study also highlights that maintaining a rhythm of continuity in blended learning in both synchronous and asynchronous modes improves students' behavioural and emotional engagement. Specific strategies include avoiding disjointedness and maintaining a high level of interaction in synchronous instruction and diversifying activities in asynchronous instruction; as well as pacing synchronous online instruction, which is usually shorter than face-to-face instruction; and motivating teachers to energise students' engagement.

In conclusion, in order to fully increase student engagement in blended learning, teachers need to reflect on whether their course structure and pacing are reasonable and whether they optimise their course design to stimulate the potential of blended learning. The teachers who participated in the survey in this study maintained consistency in their instructional design from start to finish, regardless of the size of the classes they taught or the mode of instructional activities they adopted.

4.2.2 Choice of teaching and learning activities

Promoting student motivation in synchronous teaching, whether individually (e.g., problem solving) or collaboratively (e.g., debating), increases behavioural and cognitive engagement, but the exact effect depends on whether the synchronous teaching is conducted face-to-face or online, the size of the group, the content of the course, and the type of activity. For example, in traditional blended in-

struction, teachers often use role-playing methods, whereas in blended online or blended synchronous instruction teachers mainly use discussion activities. This may be related to teachers' lack of use of digital teaching tool technology. In conclusion, most teachers choose the teaching strategies they are most familiar with and best at based on course content and class size.

Activities, themes, or related instructional content play an important role in increasing students' cognitive and affective engagement. Teachers can increase students' cognitive engagement by integrating, experiencing and/or deepening synchronous teaching and learning activities, and by restructuring the curriculum to highlight the complementary nature of synchronous and asynchronous teaching and learning activities. Some teachers believed that providing students with choices could increase students' affective and cognitive engagement. Most teachers believed that students were only given choices in the discussion sessions or in the selection of assignment topics. They believed that these choices were sufficient for students to feel ownership of their participation in the teaching and learning activities, and were sufficient to increase students' affective and cognitive engagement. In addition, in both synchronous and asynchronous teaching, the arrangement and design of teaching activities need to be carefully considered in order to maintain students' enthusiasm for participation.

4.2.3 Teacher Roles and Curriculum Relationships

How to conduct the first course teaching is particularly important. Most teachers usually start with synchronous (face-to-face or online) course teaching. On the one hand, clearly communicating to students how the blended course will unfold, demonstrating a schedule of synchronous and asynchronous teaching and learning activities, was highlighted by teachers as an important part of promoting students' behavioural and emotional engagement. In particular, the purpose of asynchronous activities and the corresponding expectations needed to be explained in order to increase student engagement in the blended instructional activities so that they would fully benefit from both modalities. This understanding echoes Shea et al. who argue that students may feel uncertain about what they need to do with asynchronous online instruction, which is why it is said to be particularly important to clarify instructional goals and expectations (Shea et al., 2006)¹²]. On the other hand, teachers need to emphasise the need to build trusting relationships in blended learning from the outset. For example, activities such as icebreakers or sharing experiences increase students' emotional and cognitive engagement. Creating personalised connections

between students and teachers and sharing with peers can also stimulate affective and cognitive engagement. Teachers can also increase students' affective and cognitive engagement through instructional strategies such as having multiple conversations with students or guiding students to establish personal learning goals at the beginning of the semester.

In addition, teacher guidance has an impact on increasing students' engagement in learning. Some teachers believed that reminding students of deadlines for learning tasks, reviewing key points, etc. could increase students' behavioural and affective engagement. Some teachers believe that it is important to capture students' attention and to guide and reassure them in a gradual manner. Particularly in the asynchronous mode, teachers remind students that teachers are available to provide guidance and support at any time, which can increase students' affective and cognitive engagement. This is consistent with Shea et al.'s study, which showed that high levels of teacher activity in asynchronous online instruction increased students' sense of connectedness and ability to learn (Shea et al., 2006)[2]. Farrell and Brunton's study, 'The Role of Reassurance and Support,' also demonstrated that teachers were more active in blended online courses by providing content. Online courses by providing content explanations, encouragement, and strategic guidance for learning can increase students' cognitive and affective engagement. In particular, this study highlights that teachers' readiness to provide support and assistance to students during synchronous and asynchronous teaching activities can be a significant motivator for students to participate in blended learning (Farrell and Brunton, 2020).

5. Conclusion

This study collected a large amount of data in three different vocational colleges in different disciplines and did an extensive and comprehensive research on the teaching strategies used by teachers in blended environments, documenting in detail the teaching strategies used by teachers in asynchronous and synchronous blended modes of teaching and learning in order to increase students' engagement in their learning and analysing them as far as possible in terms of behavioural, affective and cognitive engagement of students. This study concludes that course structure and progression, choice of teaching and learning activities, and teacher roles in relation to the course have a direct impact on increasing student engagement in learning. It is argued that in blended learning, teachers optimise synchronous and asynchronous teaching modes according to students' realities in order to improve students' learning engagement. However, there are some limitations to

this study in that it did not delve deeper into the teaching strategies used by teachers in specific subjects, but only provided a broad and comprehensive scheme of teaching strategies to understand how teachers can improve student engagement in each subject. Future research could explore teachers' use of instructional strategies for a particular subject in blended learning, or a comparison of instructional strategies in different subjects. This investigation mainly collected materials from teachers' perspectives, but not from students' perspectives. Therefore, future research could be designed more longitudinally.

References

- [1] Liu Yin. Number of most influential journal papers in each discipline ranked first in the world for the first time[N]. *Science and Technology Daily*, 2023-09-21(2).
- [2] Chen Hongjie. Academic Innovation and Section Management in Universities[J]. *Peking University Education Review*, 2012(10):2-7+187.
- [3] Huang T., Mubarak Srajuddin. Administrative Logic and Academic Logic in Research Management[J]. *Science and Technology Herald*, 2013(25):84.
- [4] Yin Lu, Man Jia. The development and revelation of China's science and technology policy in the early period of the founding of the nation[J]. *Journal of Liaoning University of Technology (Social Science Edition)*, 2011(13):48-50.
- [5] Wang Jing, Yang Chunying. Impact and reflection of performance management on university teachers' scientific research evaluation[J]. *Zhengzhou Normal Education*, 2022(11):6-9.
- [6] Zhong Yanpeng, Wang Yunchen. Research Publicity of University Teachers: Based on the Perspective of 'Power Source'[J]. *Journal of Higher Education Research*, 2021(44):25-31+87.
- [7] Liu Lei, Gong Longjiang. Academic Evaluation of Colleges and Universities 'Returning to Ontology': Reflections Based on the Overall Programme of Deepening Educational Evaluation Reform in the New Era[J]. *Education Theory and Practice*, 2022(36):3-7.
- [8] Ye Jiyuan. Discussion on the evaluation system of humanities and social sciences [J]. *Journal of Nanjing University (Philosophy-Humanities-Social Sciences Edition)*, 2010(47):97-110+160.
- [9] Liu Wenjie. Why quantitative evaluation of university research is prevalent: Based on the perspective of 'digital' as a medium of governance[J]. *University Education Science*, 2022(4):102-109.
- [10] Lu Yangxu. Institutionalisation and paradox of peer

- review and quantitative evaluation: a perspective based on the sociology of evaluation[J]. *Science and Society*, 2023(13):39-50.
- [11] Gao Han, Cheng Siqi. Ecological orientation: the value orientation of educational research evaluation in the new era[J]. *Contemporary Education Forum*, 2022(2):67-73.
- [12] Su Qiang, Cai Xiaowei. Efficiency or value: the logical dilemma of the evaluation system of college teachers and its tension adjustment[J]. *Journal of East China Normal University (Education Science Edition)*, 2023(41):133-141.