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ORIGINAL ARTICLE

Comparative analysis of teacher-centered and student-centered learning in the context of higher education: A co-word analysis

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ABSTRACT

Objective. This study compared teacher-centered and student-centered learning approaches by identifying and examining word clustering in related research literature.

Design/Methodology/Approach. To categorize and compare research findings on each learning approach, a cluster mapping methodology was employed. Five distinct clusters were identified for teacher-centered and student-centered approaches, focusing on themes relevant to each methodology.

Results/Discussion. For the teacher-centered approach, the identified clusters are *Educational Content and Beliefs, Teaching Actions and Applications, Educational Approaches and Environment, Educational Competency and Context,* and *Curriculum and Implementation.* These clusters highlight key aspects such as pedagogical strategies, teacher effectiveness, and curriculum development. Conversely, the student-centered approach clusters include *Educational Achievement and Performance, Academic Institutions and Success, Educational Processes and Agreements, Accessibility and Support in Education,* and *Educational Best Practices and Considerations.* These categories focus on student success, institutional commitment, and access. When compared, the student-centered approach refers to a means by which students are engaged and perform, while the teachers center on instructional procedures and teacher abilities. These two models relate to assessment and learning environments but concentrate on different things. Balanced frameworks integrating components from both positions may improve educational practice for educators, policymakers, and researchers. Future research should investigate hybrid models to capitalize on the strengths of both approaches for improved educational efficacy.

Conclusions. These approaches are markedly distinct from one another. Teacher-centered learning was driven by standardized testing and uniform assessments, whereas student-centered learning is designed to facilitate individual progress with continuous feedback through formative assessments. The differing perspectives on assessment reinforce the distinction between the two approaches, with proponents of each offering a compelling set of arguments in favor of and against their respective approaches.

Keywords: comparative analysis; teacher-centered learning; student-centered learning; higher education; pedagogical approaches; co-word analysis.

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INTRODUCTION

In an ever-evolving environment for higher education, finding the best teaching methods is critical to providing a sound, opportunity-dependent learning experience that has been proven to improve student outcomes (Smith, 2018). Schools are constantly adjusting to meet their data's unique needs and wants. As a result, it is critical to examine and contrast different styles of teaching in order to know what works best for students. Over centuries, two pedagogical approaches have often been underlined and in use: the teacher-centered learning (TCL) approach, which is currently the focus of this paper, also referred to as superior-based (Khan & Mohammed, 2014; Elasri, 2002) And student-centered learning (SCT). This represents an essentially different pedagogy (Jones & Brown, 2019).

Teacher-centered learning is a classical method of education that assumes teachers are the main functional unit—where everything starts and ends (Smith, 2018). It has been known to present as lecture-style teaching, in which the teacher is a source of knowledge that passively gives information to students. The educator establishes what will be learned and helps students down those trails in this construct.

On the other hand, student-centered learning focuses on students' needs and addresses their desires for more independence and engagement throughout their educational experience (Jones & Brown, 2019). It sees students as active agents of their learning, with teachers facilitating the process rather than being content deliverers. Student-centered learning fosters a collaborative, experiential, and interactive environment where students question, explore, discover, and solve problems - taking ownership of their own educational experience. Whether these alternative pedagogical approaches are utilized is an important decision, as it can significantly influence the quality of their educational experiences at university. How content is delivered, the amount of depth in level understanding gained and retained to essential skills which all develop through methods such as critical thinking or problem-solving (Smith, 2018). Furthermore, the decision to do this has an effect on not only engagement but also satisfaction and motivation for students as well as educators. In light of this significant impact on higher education, comparing teacher-centered and teacher-centered learning can help us more deliberate on effective teaching methodology issues. This research aims to identify the thematic structure, similarities, and differences around these approaches through a co-word analysis.

STUDY BACKGROUND

Higher education is going through massive changes, largely in response to emerging societal expectations regarding teaching and learning and the digital revolution encircling multiple life functions and every area of industry (Smith, 2018). Meeting the evolving needs of a 21st-century workforce means that educators need to find new ways in which we can adapt and innovate how we deliver academic teaching. Two primary focus points on the latter are constructed by two broad teaching paradigms, teacher-centered and student-centered learning approaches (Kim & Jonassen 2017). Both of these paradigms embody fundamentally different philosophical and instructional approaches with significant repercussions for higher education.

The teacher-centered learning is the traditional way of teaching, and it sees a lecturer as their main source (Smith, 2018). This most often takes the form of a lecture in which the teacher imparts information to students, who then consume it passively. The teacher establishes learning points, disseminates content, and even guides students on paths already traced. This type of learning is in contrast to student-centered learning, which takes the individual needs, autonomy, and active engagement with students on their educational path (Jones & Brown, 2019). In this approach, students are regarded as active learners, not simply content receivers. In this framework, educators serve as facilitators and orchestrate learning to cultivate a participative, experiential education ambiance. Students are encouraged to ask questions, investigate, and solve problems as they assume responsibility for learning. The predominant theories of student-centered and teacher-centered learning are well-known in the literature. Active participation, collaboration, and critical thinking are associated with student-centered

learning (Brown & Green, 2020). Similarly, this practice agrees with the constructivist perspective on learning, where learners develop their own understanding over time through personal experiences and interactions. On the contrary, teacher-centered learning cannot escape from its behaviorist roots: structured and systematic instruction, where teachers drive the process by structuring what students learn next (Smith 2018).

Numerous investigations have studied this issue in education. For instance, Johnson *et al.* (2017) studied the student motivation types and found a positive correlation with engagement in work when the learning was centered on students. With regard to the delivery of detailed content in large groups, Davis (2016) investigated teacher-centered learning by conducting use studies in lectures. Other studies have explored related topics from a bibliometric perspective, like Shehata *et al.* (2024) and Fang *et al.* (2024).

LITERATURE REVIEW

Teacher-centered learning, one of the oldest pedagogical approaches, puts the instructor in the point-blank range (Smith, 2018). This is often cast as a traditional lecture, where the teacher imparts knowledge, and students receive it passively. Here, the teacher has a series of obligations and responsibilities, including transmitting information, establishing learning objectives, and guiding students through an option with predetermined responses. It is a time-honored method of presenting material in higher education because it provides order and systematic delivery (Vanderbilt University Center for Teaching, 2018). As curriculum gatekeeper, the teacher hoards must-learn material; it remains one of the easiest and most cost-effective ways to impress upon students' foundational knowledge (especially in those disciplines where this light-bearing matter carries significant baggage). Teacher-centered learning has its cons as well. Critics also point out that it sets students in a passive learning environment, demeaning them as non-critical thinkers (Prince, 2004). Its rigidity makes it less adaptable to cater to different learning styles and individual student needs, which are now increasingly important in modern higher education (Smith, 2018).

On the other hand, student-centered learning reverses this process and puts students at the center stage of their educational experience, with specific attention supporting individual autonomy and engagement (Jones & Brown 2019). In this pedagogical shift, instructors move from knowledge givers to facilitators and coaches, creating a student-centered learning experience full of collaboration, experiential work through activities (project-based learning or challenge-based), and engagement. This method generates curiosity and sincere motivation in students, providing better results (Treve, 2021). Student-centered learning is closely associated with the constructivist theory, meaning learners build their knowledge through active participation (Jonassen, 1991). This method makes students question, discover, and solve themselves, empowering them to learn. It is particularly attractive to an instructor interested in broadening critical thinking, creativity, and problem-solving skills.

One of the most important characteristics of student-centered learning is its move from passive to active practice in teaching and learning processes (Prince, 2004). This develops motivation and self-regulation as students understand their role in influencing the learning process. Reza (2020) advocates for this method as it caters to current shifts in education, which have the learner and their varied learning styles and socio-economic backgrounds at their core. Johnson *et al.* (2017) found that student-centered learning positively affects student motivation and engagement, while Davis (2016) noted the effectiveness of teacher-centered learning in managing large groups and providing clear, detailed content.

There are a ton of different studies that try to answer the same question: how does pedagogy matter in schools? Research also suggests that student-centered learning may enhance academic performance, critical thinking skills, and motivation, as compared to traditional teacher-centered approaches (Freeman *et al.,* 2014; Kember *et al.* Yet the effect can be mixed, depending on discipline and context. This is why disciplines heavy on foundational knowledge might be more effectively served through teacher-centered approaches in content delivery. For example, student-centered

approaches were more frequently matched with better outcomes in areas that require problem-solving, creativity, and higher-order thinking.

The comparative analysis also shows differences in the teaching and learning processes related to these pedagogical approaches. In higher education, traditional classroom learning (teacher-centered) is often viewed as a more efficient way of delivering content because it provides an organized system to deliver information by the teacher (Vanderbilt University Center for Teaching 2018). Contrarily, student-centered learning emphasizes the engagement of students and interaction among them, beginning from collaboration to experiential learning (Prince 2004). Depending on the goals and content being taught or the subject, nature can decide one approach over another. A mix of these two methodologies is preferred by educators, wherein the divide between practice and content can be blurred or enhanced, depending on how this blend works for future steps in their learning journey. This implies that faculty and students' perceptions and experiences contribute considerably to comparative analysis. Teaching student-centered is notoriously difficult for faculty, particularly when so many of us learn from teacher-centered models (Kember *et al.,* 2008). The role of Faculty development and training is the most important in assisting teachers in moving effectively.

In comparison, students are attracted to the level of independence and group learning associated with a student-centered approach (Prince 2004). Nevertheless, their experiences can also be determined by the face-to-face methods they were exposed to previously, as well as learner preferences and orientations (Freeman *et al.,* 2014). Many research studies emphasize the importance of an integrated approach employing a mix of strategies under teacher-centered and student-centered purviews (Kember *et al.,* 2008). The effectiveness of any given strategy in generating a robust formative assessment environment depends on contextual factors such as subject matter, class size, and student demographics (Prince 2004). Optimal educational outcomes require a tailored approach that exploits the strengths of each method, together with specific learning objectives and content nature.

METHODOLOGY

The bibliometric co-word analysis technique was employed in this study's development. The technique was employed to analyze and compare the topics addressed by student- and teacher-centered learning. A search was conducted in the Scopus database to identify the literature that constituted the sample. The search was exclusive in nature. For instance, all literature on student-centered learning that did not address teacher-centered learning was searched initially, and the opposite was done subsequently. The search equations were as follows:

- Search equation 1 to retrieve literature on student-centered learning: (TITLE-ABS-KEY (student AND centered AND learning*) AND TITLE-ABS-KEY (higher AND education) AND NOT TITLE-ABS-KEY (teacher AND centered AND learning*)) AND PUBYEAR > 1972 AND PUBYEAR < 2024.
- Search equation 2 to retrieve literature on student-centered learning: (TITLE-ABS-KEY (teacher AND centered AND learning*) AND TITLE-ABS-KEY (higher AND education) AND NOT TITLE-ABS-KEY (student AND centered AND learning*)) AND PUBYEAR > 1987 AND PUBYEAR < 2024

The search was conducted by entering the pertinent search terms into the title, abstract, and keywords fields. All documents that had been indexed up to the present (i.e., 2023) were considered in order to ascertain temporal coverage. All document typologies were considered, as the study is an analysis of terms and, therefore, requires the inclusion of every word to ensure a robust analysis. A total of 2170 documents were retrieved through the application of search equation 1, while 126 documents were retrieved through the application of search equation 2.

The VOSviewer software was employed to generate the maps, which offers advantages for creating bibliometric maps derived from scientific literature. Prior to the generation of the maps, the terms were normalized. Subsequently, co-word maps were generated from the terms present in the title and abstract, having been previously normalized. The map derived from search equation 1 was constructed using terms that co-occurred more than ten times. In

contrast, the map derived from search equation 2 was constructed using terms that co-occurred more than five times. In this second case, a lower frequency was searched due to the limited sample size. Maintaining the occurrence threshold of 10 resulted in a map with a minimal number of words. Subsequently, an analysis was conducted on the clusters that had been formed, and qualitative inferences were drawn from the descriptions of the terms within each cluster.

RESULTS

Student-centered learning approach mapping

Five clusters were identified for the "student learning approach" and are described in detail hereinafter (See Figure 1).

- Cluster 1: *Educational Achievement and Performance*. This cluster concerns various educational achievement and performance issues, including student abilities, academic performance, assessment methods, and learning outcomes factors. The terms in this cluster underscore research on student abilities (195 occurrences), academic achievement (21 occurrences), academic performance (44 occurrences), and associated domains such as accountability, assessment, and active learning strategies. The mean publication year is approximately 2017-2018, indicating a recent trend in research activity. It is noteworthy that terms such as "academic performance" and "active learning" have high citation scores, which reflect their significant impact on the field.
- Cluster 2: *Academic Institutions and Success*. This cluster encompasses academic institutions, their personnel, and topics pertaining to success within the context of these institutions, with a particular focus on the environmental factors and circumstances that contribute to academic achievement. The key terms include "academia" (15 occurrences), "academic staff" (26 occurrences), and "academic success" (17 occurrences). Additionally, the cluster addresses subjects related to 21st-century education, academic research, and institutional success. The average publication year is approximately 2016-2019, and terms such as "academic" and "academic staff" have notable citation scores, indicating their relevance and influence in contemporary educational research.
- Cluster 3: *Educational Processes and Agreements*. This cluster is concerned with the processes and agreements that pertain to the educational system, including matters related to the acquisition, accreditation, and agreements associated with education. It is notable that the terms "acquisition" (57 occurrences), "agreement" (21 occurrences), and "accreditation" (13 occurrences) appear with considerable frequency. The cluster encompasses the procedural and administrative aspects of the educational process. The mean publication year is approximately 2017-2019, with terms such as "acquisition" and "agreement" exhibiting notable citation scores, reflecting their significance in educational processes and policy discourse.
- Cluster 4: *Accessibility and Support in Education*. This cluster encompasses topics pertaining to accessibility, support, and the implementation of educational practices and technologies. The key terms in this cluster are "access" (101 occurrences), "accessibility" (30 occurrences), and "adoption" (74 occurrences). The cluster underscores the necessity of ensuring that education is accessible and supportive for all students. The average publication year is approximately 2017-2018, and terms such as "access" and "adoption" have high citation scores, indicating their critical role in educational research and implementation.
- Cluster 5: *Educational Best Practices and Considerations*. This cluster examines optimal pedagogical practices, encompassing constructivism, computer science education, and effective teaching and learning considerations. Notable terms include "best practice" (38 occurrences), "computer science" (19 occurrences), and "constructivism" (19 occurrences). The cluster emphasizes effective educational practices and theoretical approaches. The mean publication year is approximately 2016-2017, with terms such as "best practice" and "constructivism" exhibiting notable citation scores, indicating their continued relevance in developing effective educational strategies and methodologies.

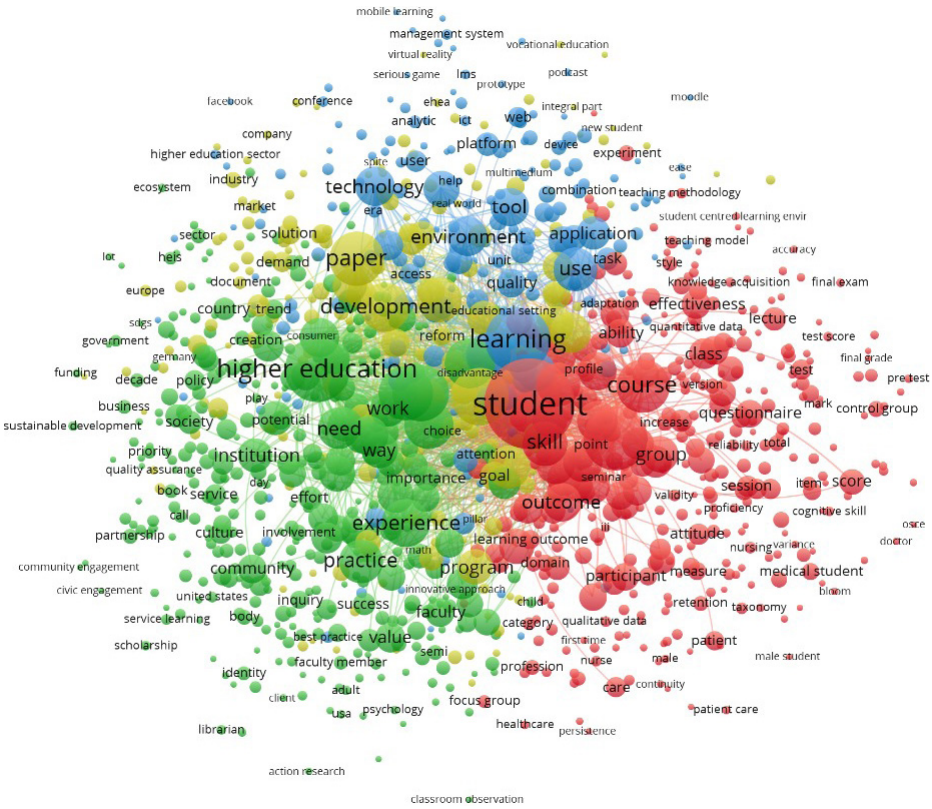

Figure 1. Co-word map derived from the student-centered learning approach.

Teacher-centered learning approach mapping

As with the teacher learning approach terms mapping, the dataset regarding the learning approach yielded five clusters (See Figure 2).

- Cluster 1: *Educational Content and Beliefs.* This cluster is concerned with the content of education, the assessment of learning, and the personal beliefs that inform educational practice. The following key terms are of particular significance: "analysis," "aspect," "belief," "characteristic," and "child." The research encompasses a diverse range of topics, including the analysis of educational content and characteristics, as well as the examination of personal beliefs about education. The mean publication year is approximately 2012-2014, with notable citation scores indicating the prominence of these topics in the field of educational research.
- Cluster 2: *Teaching Actions and Applications.* This cluster encompasses actions, additions, applications, and domains pertaining to teaching and educational practices. Notable terms include "action," "addition," "application," "area," and "article." The research places a strong emphasis on the practical aspects of teaching, including the application of educational methods and strategies. The average publication year is approximately 2011-2014, with varying citation scores indicating the relevance and impact of these practical educational topics.
- Cluster 3: *Educational Approaches and Environment.* This cluster is concerned with the examination of diverse educational approaches, activities, and the learning environment. The following key terms are used throughout this text: "activity," "approach," "chapter," "constructivism," and "environment." The research investigates a range of teaching approaches, the function of activities in the learning process, and the influence of the learning environment on educational outcomes. The mean publication year is approximately 2013-2014, with notable citation scores indicating the significance of these approaches in improving educational practices.

- Cluster 4: *Educational Competency and Context*. This cluster encompasses competencies, context, and evaluation within the educational setting. Notable terms include "competency," "context," "education," "evaluation," and "experience." The research concerns the competencies necessary for effective education, the contextual factors that influence education, and methods for evaluating educational outcomes. The average publication year is approximately 2014-2018, with high citation scores indicating the critical nature of these topics in the field of educational research.
- Cluster 5: *Curriculum and Implementation*. This cluster addresses the processes of curriculum development, implementation, and related experiences in the field of education. The following terms are of particular significance: "assessment," "China," "curriculum," "experience," and "implementation." The research illuminates the curriculum development and implementation processes, the experiences of educators and students, and assessment methods. The mean publication year is approximately 2012-2014, with notable citation scores indicating these studies' influence on enhancing educational practices and policies.

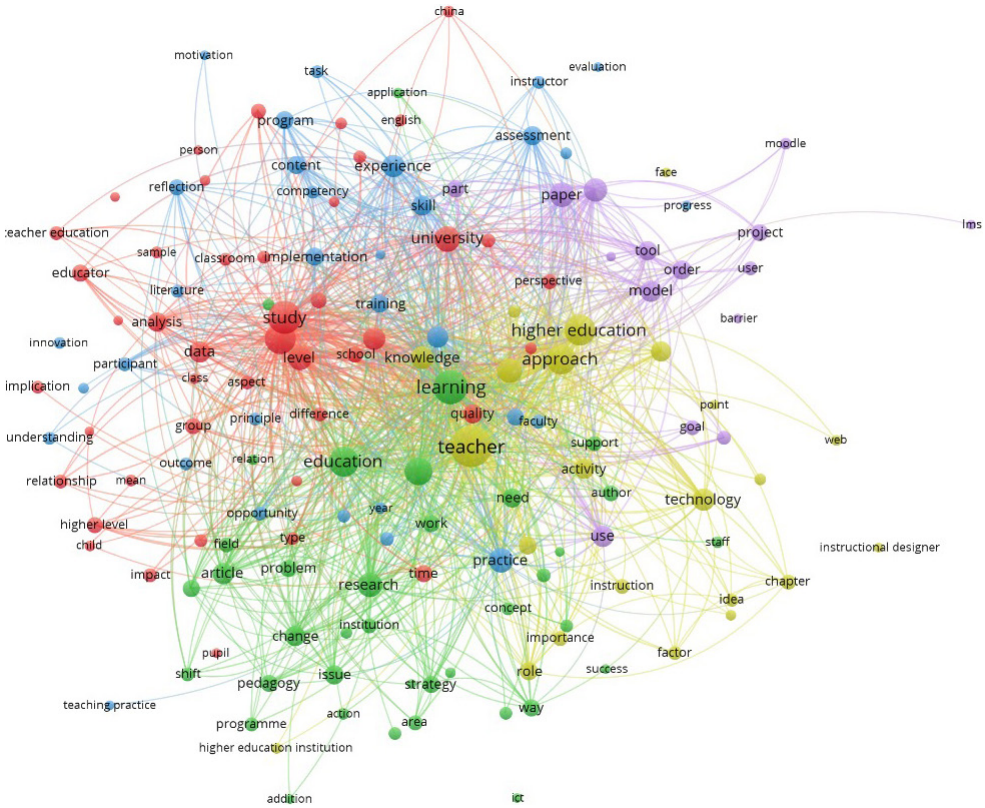

Figure 2. Co-word map derived from the teacher-centered learning approach.

A comparison of teacher-centered and student-centered learning approaches

The two maps include clusters that highlight educational content, student performance, and academic achievement. To illustrate, Cluster 1 in the student approach map concerns "Educational Achievement and Performance," whereas Cluster 1 in the teacher approach map encompasses "Educational Content and Beliefs." The results of the clustering process demonstrate the significance of teaching methodologies and educational approaches. In the student approach map, Cluster 5 encompasses "Educational Best Practices and Considerations," whereas Cluster 3 in the teacher approach map is dedicated to "Educational Approaches and Environment." The significance of assessment and evaluation is apparent in both maps. Cluster 1 in the student approach map addresses the

topic of assessment, while Cluster 5 in the teacher approach map also covers "Curriculum and Implementation," which includes assessment as a central concept. The role of the learning environment is highlighted in both maps. Cluster 1 in the student approach map includes "classroom" and "learning environment," while Cluster 3 in the teacher approach map addresses the "Educational Approaches and Environment."

In comparison, the student approach map encompasses a more expansive range of student learning, engagement, and performance elements. It comprises clusters dedicated to "Student Achievement and Performance," "Academic Institutions and Success," and "Accessibility and Support in Education." In contrast, the teacher approach map incorporates clusters that are more concentrated on pedagogical actions, applications, and competencies, such as "Teaching Actions and Applications" and "Educational Competency and Context." The student approach map includes terms such as "academic achievement," "student engagement," and "motivation," which are more oriented toward the student perspective. The teacher approach map includes terms such as "application," "competency," "evaluation," and "implementation," which are more focused on the actions and effectiveness of teachers and educational practices. The student approach map has a more detailed and specific focus on particular educational outcomes, including such items as "academic performance," "learning outcome," and "student satisfaction." The teacher approach map has a broader focus on educational processes and actions, including terms such as "action," "application," "competency," and "context." The two datasets' mean publication year and citation score exhibit variation, reflecting disparate trends and impacts in student-centered vs. teacher-centered research.

While both clustering results emphasize key aspects of education, such as teaching methods, assessment, and the learning environment, the student approach map emphasizes student performance and engagement. In contrast, the teacher approach map focuses on teaching actions, competencies, and the practical implementation of educational strategies. This discrepancy in focus indicates the intended audience and the intended application of the research in each approach.

DISCUSSION

The aforementioned clusters on the teacher-centered approach are evidenced by their alignment with key educational content, pedagogical, and teacher efficacy characteristics. This research area around cluster 1 provides evidence for the significance of understanding the role of beliefs in shaping teaching practices and subsequent educational outcomes (Smith, 2014). The second cluster, "Teaching Actions and Applications," provides a more detailed examination of the methods of teaching practice. The terms emphasize research aimed at developing classroom practice and using empirically-based accounts of observed phenomena (Jones & Brown, 2013). Such pragmatism is essential for creating an effective, practice-applicable pedagogy within this area. The third cluster, "Educational Approaches and Environment," examines diverse pedagogical approaches and creates conducive learning environments. This cluster's framing around elements such as constructivism and environment indicates the significance of establishing contexts in which diverse teaching and learning styles can be facilitated (Dewey, 2016). Cluster 4, "Educational Competency and Context," examines the competencies required for effective education and the contextual factors that may influence these competencies. Research into these topics is crucial in developing professional programs that equip teachers with the skills necessary for success (Guskey, 2002). Finally, cluster 5, "Curriculum and Implementation," encompasses the development and implementation of curricula. The terms within this cluster reinforce the emphasis that Tyler (1949) placed on both curriculum design and the practical application of educational programs. This emphasis on assessment and evaluation stems from the necessity for rigorous measures to evaluate educational outcomes and monitor the success rate of specific interventions

Regarding the student-centered learning clustering, we see a focus on performance, engagement, and support. Cluster 1 on "Educational Achievement and Performance" is the most representative one. As evidenced by the title of this section, the majority of questions pertain to factors associated with lifelong learning

and their direct impact on student's educational achievements. The high citation scores for terms such as "academic performance" and "active learning" indicate that these are highly relevant areas of educational research, as Freeman *et al.* (2014) have demonstrated. The median publication year of 2017-2018 for those published after the review highlights that interest and advances in understanding student performance represent a recent development and an ongoing area of focus. The second cluster on "Academic Institutions and Success" encompasses studies that examine the role of academic institutions in fostering success. These studies underscore the importance of creating an ecosystem that nurtures students' ability to achieve success (Astin, 1993). The average publication year of 2016-19 aligns with contemporary interests in organizational achievement and the efficacy of educational policy.

Meanwhile, the third cluster, "Educational Processes and Agreements," pertains to education-related procedures and systems. The repetition of terms such as "acquisition" and "agreement" reflects a descriptive approach to the operational components of educational systems, particularly in relation to policy-making and administrative efficiency (Oakes, 2005). The fourth cluster, 4, "Accessibility and Support in Education," underscores the necessity of facilitating access and providing comprehensive assistance to all learners in educational settings. The high citation scores for terms such as "access" and "adoption" indicate that accessibility is a central concern in the scholarship of education, encompassing research, theory, and practice (Rose & Meyer, 2002). Lastly, cluster 5 is about implementing optimal pedagogical practices and theoretical approaches. The pervasive emphasis on "best practice" and a relatively implicit constructivist perspective suggests the persistence of efforts to identify effective teaching practices (Bruner, 1966).

The student-centered map is oriented towards educational results, such as achievement within school or student engagement. In contrast, the teacher-centered model highlights the approach to teaching and attitudes about teachers' competence in implementing ideals. This distinction aligns with a given approach's inherent proclivities and priorities. To illustrate, the student-centered approach to "Educational Achievement and Performance" is concerned with measuring student performance in an academic setting (Hattie, 2008). Similarly, the second item on the teacher-centered approach, "Educational Content and Beliefs," reflects an interest in more foundational educational elements. This includes how educators acquire information or beliefs and the influence these have on teaching practices (Pajares, 1992). Although both approaches recognize the value of assessment and evaluation, they do so differently. As Black (1998) notes, a key distinction between the student-centered approach and the teacher-centered perspective is that any evaluation contributes to the overall development of education.

The practical implications of the key findings presented in this study are applicable to researchers, educators, and policymakers. For educators, an awareness of these methodologies and their respective advantages and disadvantages can facilitate the construction of an appropriate balance in instructional approaches, encompassing both teacher-centered and student-centered techniques. Educators may thus blend teacher-centered approaches with more student-centered methods, thereby providing a superior overall learning experience (Prince, 2004).

These insights can inform policymakers' decisions regarding establishing educational policies that support a diverse range of teacher and teaching practices while ensuring that neither classroom efficacy nor student popularity is compromised. This enhanced efficiency may inform the design of more integrated teacher education programs that scaffold developmental understandings, practical experiences, and academic competencies (Darling-Hammond, 2000). Scholars may consider the ways in which these two approaches are similar and potentially complementary or how different components can be combined to improve educational results when studying this topic. Finally, it may be beneficial to investigate the consequences of integrating teacher-centered and student-centered approaches by conducting a study on combining these methods. Ideally, this study would assess student achievement gains and teacher satisfaction improvements (Cornelius-White, 2007).

CONCLUSION

The present paper offers a detailed examination of the discrepancies between teacher-centered and student-centered pedagogical approaches in contemporary educational settings. The teacher-centered model emphasizes curricular content, teaching practices, and teachers' self-efficacy. Knowledge delivery occurs in a traditional format, whereby an expert controls all instructional decisions and transmits knowledge from educator to student. The student-centered design places emphasis on the actions and engagement of students, encompassing factors such as interest, willingness to participate in learning activities, and the overall level of engagement (Brown, 2020; Johnson & McIlrath, 2018). These models are markedly distinct from one another. Teacher-centered learning is driven by standardized testing and uniform assessments, whereas student-centered learning is designed to facilitate individual progress with continuous feedback through formative assessments (Smith & Jones). The differing perspectives on assessment reinforce the distinction between the two models, with proponents of each offering a compelling set of arguments in favor of and against their respective approaches.

Educators, researchers, and policymakers must consider the implications of these results. Educators can more effectively tailor their teaching methods for students from diverse backgrounds, as they will possess a more nuanced understanding of the relative efficacy of different approaches, weighing the advantages and disadvantages of each. Integrating student-centered learning elements into a predominantly teacher-centered classroom can enhance student engagement and motivation, which in turn can facilitate further academic success (Williams & Williams, 2021). These insights could inform policymakers in striking the optimal balance for educational policies, integrating teacher-centered approaches into a largely clearly defined structure, and accommodating student-centric methods while promoting environments where all students are able to excel (Anderson, 2022).

Future researchers may investigate the potential of a hybrid model combining the advantages of current best practices, such as blended learning, focusing on the long-term impact on students' achievements and satisfaction (Martin *et al.,* 2023). This research highlights the potential benefits of an educational approach that considers both cognitive and affective dimensions equally, resulting in a more holistic adaptation of our educational system (Dewey, 1938). The rationale behind this design will be analyzed and explained in the context of advancing different educational goals, with the aim of guiding stakeholders, including educators, policymakers, and researchers, in developing more effective inclusive practices, ultimately leading to a formless individualized learning landscape.

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Conflict of interest

The author has no potential conflict of interest with regard to this work.

Ethical statement

This study received ethical research approval from the Walailak University Research Ethics Committee with reference number WUEC-23-291-01.

Statement of data consent

The data generated during the development of this study has been included in the manuscript.

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