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Meta-synthesis of Student-center Teaching Approach: Impact and Issues

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Abstract: The student-centered teaching method is an instructional approach that emphasizes student involvement and autonomous learning, aiming to stimulate students' interest and initiative in learning. This article explores the impact and issues of the student-centered teaching method in educational practice from a meta-synthetic perspective. This paper will investigate the positive impact of implementing student-centered teaching methods and shed light on the inherent challenges associated with their implementation. By understanding the potential benefits and obstacles, educators and policymakers can make informed decisions and develop strategies to effectively integrate student-centered approaches into educational systems. The findings of this study will contribute to the ongoing discourse on pedagogical practices, ultimately striving for an inclusive and effective education system that meets the diverse needs of students.

Keywords: meta-synthesis; student-center teaching; teaching and learning.

1. Introduction

The concept of "student-centered" education is widely discussed globally. The Sydney Agreement, an international engineering education qualification mutual recognition agreement, emphasizes "student-centered, result-oriented, continuous progress, and respecting professional personality." The Education Plan Outline (2010-2020) highlights taking students as the main body and promoting their healthy growth as the goal of all school work [1].

In the dynamic landscape of education, teaching has evolved from traditional teacher-centered methodologies to student-centric approaches. This shift reflects a pedagogical philosophy that places learners at the forefront, actively engaging them in the learning process. This metamorphosis has sparked interest in understanding the impact and addressing associated issues of implementing student-centered teaching(SCT) approaches.

The purpose of this meta-synthesis is to explore and synthesize existing research on SCT methods, examining their multifaceted impact on students, educators, and the learning environment. By employing a meta-synthesis approach, we aim to distill collective insights from a diverse body of literature, providing a comprehensive understanding of the subject matter.

The meta-synthesis will consider a range of SCT strategies, including but not limited to collaborative learning, inquiry-based learning, flipped classrooms, and personalized learning experiences. By synthesizing findings from various studies, we aspire to provide educators, researchers, and policymakers with a nuanced perspective that can inform future practices and policies in the realm of student-centered education.

2. Purpose and Research Objectives

2.1. Identify the positive impact of the implementation of SCT methods.

2.2. Identify the inherent problems in the implementation of SCT methods.

2.3. Determine the implementation of SCT methods.

3. Research Methodology

Meta-synthesis originated in health sciences and later extended to educational sciences. It involves systematically reviewing and synthesizing results from multiple qualitative studies to generate new insights. Synthesis merges ideas, while analysis deciphers information. Meta-analysis traces back to the early 20th century, while meta-synthesis emerged later in the same century as an evolution of Grounded Theory [2].

Meta-synthesis includes stages such as defining research questions, identifying relevant research, extracting data, synthesizing research results, and interpreting them to generate new insights or theoretical frameworks [3]. In the context of this meta-synthesis study, the results of other studies were qualitatively analyzed.

Certainly, a literature analysis is a valuable method for exploring the positive effects and inherent problems in the implementation of SCT methods.

3.1. Scope of the study

In February 2024, the researchers used the China National Knowledge Network (CNKI), the largest database in China, and Google Academic to conduct the first phase of identification of literature from 2021-2024. The paper title, abstract, and keywords were used for the search. Chinese and English are the only two languages that can be searched. The time frame is 2021 to 2024.

Here's how researcher structure the literature analysis for each research objective:

Research Objective 1: Identify the Positive Effects

Literature Search:

Conduct a systematic search in academic databases such as CNKI and Google Scholar. Use keywords such as "SCT," "active learning," and "learner autonomy."

Inclusion Criteria:

Define criteria for including studies. Focus on recent publications, peer-reviewed articles, and books that specifically investigate the positive outcomes of SCT methods.

Research Objective 2: Identify the Inherent Problems

Literature Search:

Conduct a similar literature search, this time focusing on studies that investigate challenges, barriers, and problems associated with the implementation of SCT methods.

Inclusion Criteria:

Define criteria for including studies, emphasizing those that discuss challenges, potential pitfalls, and obstacles faced by educators and institutions when adopting student-centered approaches.

3.2. Research Process

3.2.1. Comparison and Contrast:

After synthesizing findings for each objective, compare and contrast the positive effects with the inherent problems. Explore whether certain positive outcomes alleviate or contribute to the resolution of specific challenges.

Look for emergent patterns that might suggest nuanced relationships between positive effects and implementation challenges. Identify areas where trade-offs or synergies may exist.

3.2.2. Research Gaps:

Highlight any gaps in the literature where more research is needed. These gaps may indicate areas where the relationship between positive effects and challenges is not well-explored.

By conducting a thorough literature analysis following these steps, the researcher will gain a comprehensive understanding of the positive effects and challenges associated with implementing SCT methods in the educational landscape.

3.2.3. Thematic Analysis:

Categorize the literature according to themes related to positive effects. Look for recurring topics such as increased student engagement, higher motivation, improved critical thinking skills, enhanced problem-solving abilities, and better academic performance.

Categorize the literature based on common themes related to challenges in implementation. Look for issues such as resistance from educators, lack of institutional support, difficulties in assessing student progress, and concerns about curriculum alignment.

3.2.4. Synthesis of Findings:

Summarize the key findings from the selected literature. Create a synthesis that highlights patterns, trends, and consensus among different studies regarding the positive impact of SCT methods.

Summarize the key findings related to challenges and problems in the implementation of SCT methods. Develop a synthesis that outlines the recurring issues and the context in which they arise.

4. Findings and Discussion

Based on literature retrieval and screening, 6 literature were selected for analysis in this comprehensive study, and the summary is shown in Table 1.

Table 1. Meta-Analysis Findings

Title	Author/s	Year	Journal DOI
Practice and Exploration of Student-centered Classroom Teaching Reforms in Higher Vocational Colleges —A Case Study on New Media Advertorial Writing	Xue Guiyan	2023	10.16083/j.cnki.1671-1580.2023.12.018
Reform of Classroom Teaching for Preschool Education Majors in Local Undergraduate Colleges Based on Teacher Education Professional Certification	Wang Xiaojing Liu Shasha Zhang Shuwei Zhang Liqun Zhao Xiaozhu	2024	10.16681/j.cnki.wcqe.202401041
Research on the Educational Concept of "Student-centered" in Higher Education	Su Dandan	2021	10.27322/d.cnki.gsgyu.2021.000861
Exploration of Student-centered Classroom Teaching Reform and Practical Paths from the Perspective of Vocational Undergraduate Education	Chen Guorui	2023	10.26914/c.cnkihy.2023.034257
Research on student-centered classroom teaching reform and practice from the perspective of vocational undergraduate education	Yang Xuemei	2024	CNKI:SUN:CAIZ.0.2024-01-019
Research on Student-centered Digital Twin Classroom Teaching	Liu Ping Cao Xuehua	2023	10.15966/j.cnki.dnydx.2023.11.011

The study included a total of 6 papers, all of which used at least qualitative methods. Among them, 5 papers study the impact of SCT on classroom teaching reform, and 1 paper studies the concept of SCT.

4.1. The positive impact of implementing student-centered teaching methods

According to meta-analysis, the implementation of student-centered teaching methods can have various positive impacts.

Liu and Cao believed through their analysis of the teaching of the Mathematics Twin Classroom that implementing the SCT teaching method can provide teachers with analysis of learning situations and feedback on teaching effectiveness, and provide students with real-time evaluation of the learning process and accurate learning content. Through the implementation of teaching mode reform, students' learning initiative has been significantly improved, and the quality of course teaching has been significantly improved [4].

Xue believed that by using student-centered teaching methods and constructing an organic connection mechanism between in-class and out-of-class, students can transform their learning from passive to active [5]. Establishing a student-centered approach in teaching, forming an autonomous, collaborative, and research-oriented learning model, exploring and analyzing problems in real teaching cases, encouraging students to innovate independently, providing opportunities for students who have spare energy to exert self-directed learning, and truly transforming their learning from passive to active [5].

SCT can cultivate students' practical abilities and enhance their competitiveness. SCT can delegate the decision-making power of learning to students. Teachers encourage and support students to plan their own in-class and out-of-class time, find suitable learning methods, integrate knowledge, and truly practice and improve textbook knowledge in their work. [5].

The SCT curriculum design concept is to closely adhere to the goals and curriculum standards of professional talent cultivation, with vocational ability cultivation as the goal, and real projects of school-enterprise cooperation as the carrier for project design and development, to achieve a win-win situation for students, teachers, schools, and enterprises and lay the foundation for comprehensive talent development [5].

The SCT model calls for diversified learning methods, which can stimulate students' learning enthusiasm. These teaching methods include lectures, mentor tutoring classes, group discussion classes, topic discussions, reading and communication training courses, off-campus internships, entrepreneurship competitions, experimental classes, case studies, scenario simulation teaching methods, research training teaching methods, etc [6,7]. The development of multimedia technology has also provided us with more choices in using teaching media, making classroom effects more vivid [6].

4.2. The inherent problems in implementing SCT methods

Promoting the modernization of higher education is an important link in building an educational powerhouse. Integrating the student-centered educational philosophy into the process of higher education has profound practical significance. Under the concept of "student-centered" higher education, universities should continuously learn and explore their teaching models. Many universities have realized the importance of teaching model reform, but in practical implementation of the "student-centered" higher education concept, they still face many shortcomings [8].

Schools focus on imparting knowledge, yet they should also prioritize enlightenment and fraternity. Current education lacks a student-centered approach, neglecting practical skills like conservation and scientific research. Teachers need to reassess classroom objectives to better prepare students for diverse professional roles [8-10].

In terms of classroom teaching, the school lacks practical and feasible measures in personality education, and has not developed targeted training programs and potential stimulation mentors. There are various problems in the classroom teaching of preschool education, such as teachers lacking time awareness, unclear language expression, simple content setting, and unreasonable progress control. Although in theory, there should be a shift towards student-centered teaching, in reality, many teachers still focus on teaching, lack interaction with students, and overly rely on a single teaching method. This phenomenon goes against the philosophy of teacher training professionals, neglecting the learning needs and teaching ability development of students. Therefore, the classroom teaching methods of teacher training professionals urgently need to be reformed to better meet the personalized needs of students and cultivate their innovative spirit [8,10]

In terms of teaching reform, the student-centered classroom teaching model emphasizes the cultivation of students' practical operation and application abilities. This means that traditional teaching methods and resources may not be able to meet the needs of the new model[7]. Teachers are the main executors and practitioners of educational reform, but in the process of classroom teaching reform, many teachers have not actively participated in educational reform due to various reasons, resulting in the reform not achieving the expected results [7].

In terms of teaching management, Sun pointed out the challenges of implementing personalized education in higher education. In China's education system, students are often required to obey educational authorities, which limits the cultivation of personality development and innovative consciousness. In addition, the traditional classroom layout also restricts teacher-student interaction, making the way students acquire knowledge more passive. Therefore, Sun advocates that teaching management should pay more attention to guiding strategies, student-centered, break traditional models, promote teacher-student interaction, and thus improve the quality and effectiveness of higher education [8]. University classrooms are often rectangular, forming a "rice field classroom space" where teachers and students face each other off. This fixed form limits students' initiative and teacher-student interaction [8].

In terms of teaching investment, Wang et al.'s survey shows that teachers in the preschool education major of Z College tend to focus their energy on scientific research work, and their investment in classroom teaching is limited. This has led to some students in the preschool education major reporting that some classroom teaching lacks vitality, their desire for knowledge in the classroom is not strong, and there is insufficient interaction between teachers and students in the classroom [10].

In terms of teaching evaluation, Wang's survey shows that there are problems with unclear goals, single subject, and formality in teaching evaluation. Schools should clarify talent cultivation goals, improve teaching evaluation methods, focus on process evaluation and diverse evaluation methods, in order to promote the comprehensive development of students [10].

In terms of investment in teaching funds, according to

Yang's research, the lack of teaching funds limits the updating of teaching equipment, affects the effectiveness of practical courses, and leads to teaching mostly remaining at the theoretical level. This situation is not conducive to the practical application of student skills and future career performance, so increasing financial investment has become the key to improving teaching quality [7].

4.3. Implementation Suggestions for student-centered teaching methods

Modern education emphasizes the core position of students and highly values their needs and desires. In the field of education, teachers need to keep up with the times, and constantly examine and adjust their educational concepts to ensure consistency with the core concepts of modern education [7].

In terms of classroom teaching, according to research by scholars, classroom teaching should focus on the student's subjectivity and teacher-student interaction. Teachers need to systematically organize course objectives and convey them to students to enhance their sense of learning significance. The talent cultivation plan and curriculum standards should be student-centered, guide efficient learning, and plan spare time reasonably[5]. Teachers play the role of designers in student-centered classrooms, with the goal of improving learning outcomes, emphasizing ideological and political elements, and achieving moral education goals[6].

In terms of classroom teaching reform, classroom teaching reform requires collaborative efforts from education management departments, schools, and teachers. The school provides funding and policy support to establish teaching and research institutions; Teachers should enhance their teaching abilities and ensure a student-centered approach. Teaching focuses on content and student learning outcomes, encourages deep thinking, and provides a presentation platform. The goal of educational reform is to cultivate high-quality applied talents, and digital twin technology can be used to simulate the working environment of enterprises and cultivate high-quality skilled talents[4,5,7].

In a student-centered teaching environment, teachers are no longer the leaders, but the "designers" of the learning environment and process. Curriculum design needs to adhere to the principle of "student-centered", improve learning effectiveness, and achieve moral education goals[6]. Teachers should pay attention to teaching content, promote student thinking, provide a stage for presentation, and adjust the teaching process with students as the center[5]. Educational progress requires teachers to examine and adjust their teaching concepts, and pay attention to the needs of students[7].

In terms of school management, schools should strengthen the classroom teaching process according to the certification standards for teacher education majors, increase investment in education majors, establish teaching objectives centered on education, and enhance students' professional abilities and literacy[10]. Schools should highlight the characteristics of teacher education, use multidisciplinary platforms to improve teacher education levels, design targeted classroom goals, and meet future job requirements[10].

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In terms of classroom teaching design, it should be student-centered and ensure full interaction. Teachers should sort out knowledge, abilities, qualities, and ideological and political goals, clarify teaching objectives, and enhance the sense of learning significance. Emphasize the construction of talent training programs and curriculum standards, with student growth as the center, and effectively guide student learning[5].

In terms of teaching evaluation, teachers should adhere to the principle of cultivating students with moral character and incorporating professional ethics and conduct into the criteria for excellence evaluation and promotion in educational professional classrooms. The evaluation should comprehensively consider both quantitative and qualitative evaluations, including self-evaluation by teacher trainees, self-evaluation by teachers, and peer evaluation, to ensure scientific and comprehensive evaluation[10].

In terms of investment in teaching funds, universities should continuously increase education investment and strengthen support conditions[10].

5. Conclusion

By thoroughly studying successful "student-centered" classroom practices abroad and analyzing the challenges facing student-centered teaching in Chinese universities, we can devise more effective educational reform strategies. The key lies in deeply analyzing existing deficiencies and their causes, adhering to core principles such as respecting students' agency, individual differences, and employing flexible and diverse educational approaches. Furthermore, by utilizing various educational platforms such as research, organization, practice, and curriculum development, we can ensure that the concept of "student-centeredness" is truly integrated into educational practices, thereby enhancing the effectiveness of education.

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