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*Article*

# Factors Contributing to School Effectiveness: A Systematic Literature Review

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**Abstract:** This paper aims to provide a systematic review of the literature on school effectiveness, with a focus on identifying the main factors that contribute to successful educational outcomes. The research question that this paper aims to address is: What are the main factors of school effectiveness? The research was interested in several descriptors such as school, effectiveness/efficiency theories, effectiveness/efficiency research, and factors. Studies were reviewed through two databases: JSTOR and ERIC (published within the 2016-2022 period). The paper defines several categories that are exposed within school effectiveness research. Within these categories, various factors that affect the students' outcomes and the defined effectiveness at school are listed. As the results show, the issue of school effectiveness is a multifaceted challenge as the effectiveness of schools is a complex concept that can be measured through various indicators such as academic achievement, student engagement and teacher satisfaction. The review of school effectiveness has revealed that several factors contribute to effective schools, such as strong leadership, effective teaching practices, a positive school culture and parental involvement. Additionally, school resources, such as funding and facilities, can impact school effectiveness, particularly in under-resourced communities.

**Keywords:** school effectiveness (research); SER; school performance/outcomes; systematic literature review

## 1. Introduction

The answer to the question “What makes a school practice effective” is the Holy Grail of educational research [1]. School effectiveness has been a topic of research interest for several decades, with scholars and policymakers seeking to identify the key factors that contribute to successful educational outcomes. The concept of school effectiveness refers to the extent to which a school is able to achieve its goals and objectives in terms of student learning, development and well-being [2]. This article is not focused on the historical view of school effectiveness research (SER) or phases in its development but rather on identifying factors that are contributing to school effectiveness. School effectiveness research concerns educational research and explores differences within and between schools and malleable factors that improve school performance [3] and/or achievements and/or outcomes. Educational (school) effectiveness can be defined as a degree in which an educational system and its components and stakeholders achieve specific desired goals and effects [4]. Taking into consideration different terminology used in researching school effectiveness and that we were not focusing on those possible differences when describing our results, let's first focus on possible differences in what effective schooling can contribute to - as the specific desired goals and effects of schooling can be numerous and especially because different factors of those goals can be inter-linked.

Academic performance, sometimes known as school readiness, academic achievement and school performance are often used as synonyms and several authors agree that is the result of learning, prompted by the teaching activity of the teacher and produced by the student [5]. However, at the same time, there seems to be a lack of consensus among researchers regarding the similarities and differences among those constructs: namely academic performance, achievement, and learning outcomes [6] For those who view them as the same they can be used interchangeably. But for others, and mostly the reason for that is that they come from different disciplines and thus have various understanding regarding the perception and the ways each of these constructs were used in relation

to certain variables differs, can mean something different [6] although in some small varieties. The academic performance of a student can be regarded as the observable and measurable behaviour of a student in a particular situation, and it can consist of scores obtained from teacher-made tests, first term examinations, mid-semester tests etc. [6], which can be measured at any point. Whereas achievement is measurable behaviour in a standardised series of tests as cited by Simpson and Weiner in [6] (p. 6) or measured by a standardised achievement test developed for school subject as cited by Bruce and Neville in [6] (p. 6), means that academic achievement is measured in relation to what is attained at the end of a course, since it is the accomplishment of a medium or long term objective of education (cannot be attained within a short period or at a slot). It is important that the test should be a standardised test to meet the national norm [6] (pp. 6–9). Academic achievement is a representation of performance outcomes that indicate the level to which the student has attained specific goal that were the focus of activities in instructional environments [7]. School systems mostly define cognitive goals that either apply across multiple subject areas (e.g., critical thinking) or include the acquisition of knowledge and understanding in a specific intellectual domain (e.g., numeracy, literacy, science, history) - therefore, academic achievement should be considered as a multifaceted construct that comprises of different domains of learning [7]. The definition of academic achievement depends on the indicators used to measure it and among the many criteria that indicate academic achievement, there are very general indicators (e.g., procedural and declarative knowledge acquired in an educational system), more curricular-based criteria (e.g., grades or performance on an educational achievement test), and cumulative indicators of academic achievement (e.g., educational degrees and certificates) [7]. Academic achievements are usually expressed through school grades as cited by Martinez-Otero in [5]. Learning outcomes may be used when looking for performance or achievement as an attitude of students towards a particular subject [6] (p. 14). Aremu and Sokan [8] view learning outcomes (academic achievement and academic performance) determined by family, schools, society, and motivation factors.

We can summarize that academic outcomes (performances and/or achievements) or educational goals and effects are influenced by several school and out-of-school (e.g. family) factors, as well as student (individual) factors, with inter-relation factors also being of importance. And all of this is contributing to the school efficiency.

Schools have important “effects” on children and their development, so “schools do make a difference” Reynolds and Creemers in [9] (p. 10). SER studies seek to include factors such as “gender, socio-economic status, mobility and fluency in the majority language used at school” in assessing the impact of schools [9] (p. 11). In recent years, there has been a growing interest in understanding the factors that contribute to school effectiveness, particularly in light of concerns about the quality of education and the need to improve educational outcomes. Research suggests that school effectiveness is a multifaceted concept that is influenced by a range of factors, including school leadership, teacher quality, curriculum and instruction, school culture and climate, parental involvement and student characteristics [2,10,11]. However, the relative importance of these factors may vary depending on the context in which they are examined. Therefore, it is important to conduct a comprehensive review of the literature to identify the key factors of school effectiveness across different contexts.

This paper aims to provide a systematic review of the literature on school effectiveness, with a focus on identifying the main factors that contribute to successful educational outcomes. The review will draw upon a range of empirical studies, meta-analyses and reviews to provide a comprehensive overview of the current state of knowledge on this topic. In this research, the literature review was done by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines [12]. Systematic reviews of the literature have an important role and can identify different problems that can be addressed in future studies, “they can generate or evaluate theories about how or why phenomena occur” and they can address questions through several research that cannot be done by individual studies [12] (p. 1). This study aims to provide an overview of theoretical foundations of school effectiveness and to define different categories and factors within school effectiveness research. The research was interested in several descriptors such as school, effectiveness/efficiency theories, effectiveness/efficiency research, and factors. Studies were reviewed

through two databases: JSTOR and ERIC. This paper defines several categories that are exposed within school effectiveness research and within these categories, various factors are listed that affect the students' outcomes and the defined effectiveness at school. The research question that this paper aims to address is: What are the main factors of school effectiveness? This paper can be helpful in the overview of the area of school effectiveness research and the research question is of significant importance as it can help inform educational policy and practice by identifying the key areas that schools should focus on in order to improve student outcomes. Several studies have attempted to answer this question, but there is still much debate and discussion surrounding the factors that contribute to school effectiveness.

## 2. Theoretical background

The concept of school effectiveness emerged in the 1960s and 1970s in response to growing concerns about the quality of education and the need to improve educational outcomes for students [4,11,13]. Early definitions of school effectiveness focused on the achievement of educational outcomes, such as academic performance and the ability of schools to meet the needs of students from diverse backgrounds [4,14].

Coleman et al. [15] argued that students' socioeconomic status is a crucial factor affecting their academic achievement in schools, which has a greater impact than school characteristics. This is consistent with the conclusion reached by Jencks [16], who found that schools do not have a statistically significant impact on student achievement. These findings paved the way for school effectiveness research, which emerged in the early 1970s as a radical movement aimed at exploring the factors within schools that contribute to better educational performance for students, regardless of their social background [17]. In the field of education, effective-schools research emerged as a response to previous studies such as Coleman's and Jencks', which indicated that schools had little impact on students' achievement. As titles such as "Schools can make a difference" and "School matters" suggest, the goal of effective-schools research was to challenge this notion and explore factors that contribute to successful schools. What sets effective-schools research apart is its focus on investigating the internal workings of schools, including their organization, structure, and content, in order to identify characteristics associated with effectiveness [18,19]. According to Muijs [18], school effectiveness research sought to move beyond the prevailing pessimism about the impact of schools and education on students' educational performance. The movement aimed to focus on studying the factors within schools that could lead to better academic performance for students, irrespective of their social background [18] (p. 141). Scheerens et al. [20] (p. 43) summed up the five factors of early research of school effectiveness: "strong educational leadership, emphasis on the acquiring of basic skills, an orderly and secure environment, high expectations of pupil attainment, frequent assessment of pupil progress".

According to various scholars [21–26], defining educational quality is a challenging task due to the diverse settings, stakeholders and goals involved in education. Generally, educational quality can be defined as achieving the desired standards and goals. Creemers and Scheerens [27] further added that quality refers to the characteristics and factors of the school that contribute to differences in outcomes between students in different grades, schools and educational systems. However, these definitions fail to provide a clear explanation of the specific characteristics that result in quality education and schools [4] (p. 2). School effectiveness is a subset of educational effectiveness or educational quality. According to Scheerens [25], educational effectiveness refers to the extent to which an educational program or institution achieves its intended outcomes, while school effectiveness is concerned with the extent to which a school achieves its goals and objectives. Burusic et al. [4] also notes that school effectiveness research is a branch of educational effectiveness research that specifically focuses on the functioning of schools and their impact on student outcomes.

Theories of school effectiveness have evolved over time, with a greater emphasis on the role of leadership and school culture in shaping educational outcomes. One of the most influential models of school effectiveness is the "Effective Schools Model" developed by Edmonds [28]. This model identified five key characteristics of effective schools: high expectations, strong instructional

leadership, a safe and orderly environment, a focus on basic skills, and frequent monitoring of student progress.

Subsequent research has confirmed the importance of these factors in promoting school effectiveness [2,29]. For example, a study by Leithwood et al. [2] found that effective school leadership was associated with improved student outcomes, including academic achievement and graduation rates. Similarly, research by Ismail et al. [30] highlighted the importance of a positive school culture, including supportive relationships among staff and students, in promoting school effectiveness.

Reynolds et al. [31] (p. 3) propose that there are three primary areas of focus in School Effectiveness Research (SER):

- School Effects Research: Investigating the scientific characteristics of school effects, which have evolved from input-output studies to current studies that use multilevel models.
- Effective Schools Research: Researching the procedures and mechanisms of effective schooling, which have developed from case studies of exceptional schools to contemporary studies that integrate qualitative and quantitative methods to study classrooms and schools concurrently.
- School Improvement Research: Examining the methods through which schools can be transformed, utilizing increasingly advanced models that surpass the simple implementation of school effectiveness knowledge to employ sophisticated "multiple lever" models.

Sammons and Bakum [9] (p. 10) argue the importance of different factors that are associated with student attainment:

"individual characteristics (age, birth weight, gender), family socio-economic characteristics (particularly family structure, parental background: qualification levels, health, socio-economic status, in or out of work, and income level), community and societal characteristics (neighborhood context, cultural expectations, social structural divisions especially in relation to social class)".

More recent theories of school effectiveness have also emphasized the need to address systemic inequities and promote social justice in education [32,33]. These theories recognize the role of societal factors, such as poverty and discrimination, in shaping educational outcomes and the need for schools to adopt a more inclusive and equitable approach to education. For example, Ainscow [32] developed a model of "inclusive school leadership," which emphasizes the importance of creating a culture of inclusion and diversity in schools.

Overall, theories of school effectiveness have evolved over time, reflecting changing perspectives on the role of schools in promoting educational outcomes. Key factors identified in the literature include effective school leadership, a positive school culture and a focus on meeting the needs of diverse students. However, more recent theories also recognize the need to address systemic inequities and promote social justice in education.

According to Heyneman and Loxley in [34], multiple linear regression was used to re-analyze IEA data on student achievement in industrialized countries. The researchers found that student background variables such as parental education, father's occupation, number of books at home, use of dictionary at home, the sex of student and the age of student explained approximately 20% of the total variance in science achievement, which accounted for roughly 50% of the explainable variance. Furthermore, OECD in [34]) reported that PISA 2000 also revealed that various student background factors, such as parental occupational status, cultural possessions at home, parental involvement, home educational resources, participation in cultural activities and family wealth explained significant variance in the academic achievement of 15-year-old students.

### 3. Materials and Methods

For this article, a systematic literature review has been done. The literature review was done by the PRISMA protocol [12]. "To ensure a systematic review is valuable to users, authors should prepare a transparent, complete, and accurate account of why the review was done, what they did (such as how studies were identified and selected), and what they found (such as characteristics of contributing studies and results of meta-analyses)" [12] (p. 1). We were interested in several descriptors such as school, effectiveness/efficiency theories, effectiveness/efficiency research, and

factors. For searching, the following formula was used: (school AND effectiveness) OR (school AND efficiency)) AND (theories OR research OR factors).

Two databases were used: JSTOR and ERIC. The search and review of the studies were carried out from August to October 2022. The period was limited between 2016 and 2022, except in database ERIC as we did not have that option. In the database, ERIC used research within the last five years, from 2018 to 2022, which was one of the options in the database. In JSTOR the period was limited between 2016 and 2022. This decision was made because this literature review will be used in further research for a doctoral dissertation of the main authors of this article, where we will do the secondary analysis with the ICCS 2016/2022 (International Civic and Citizenship Education Study), and we are interested in the literature from then on.

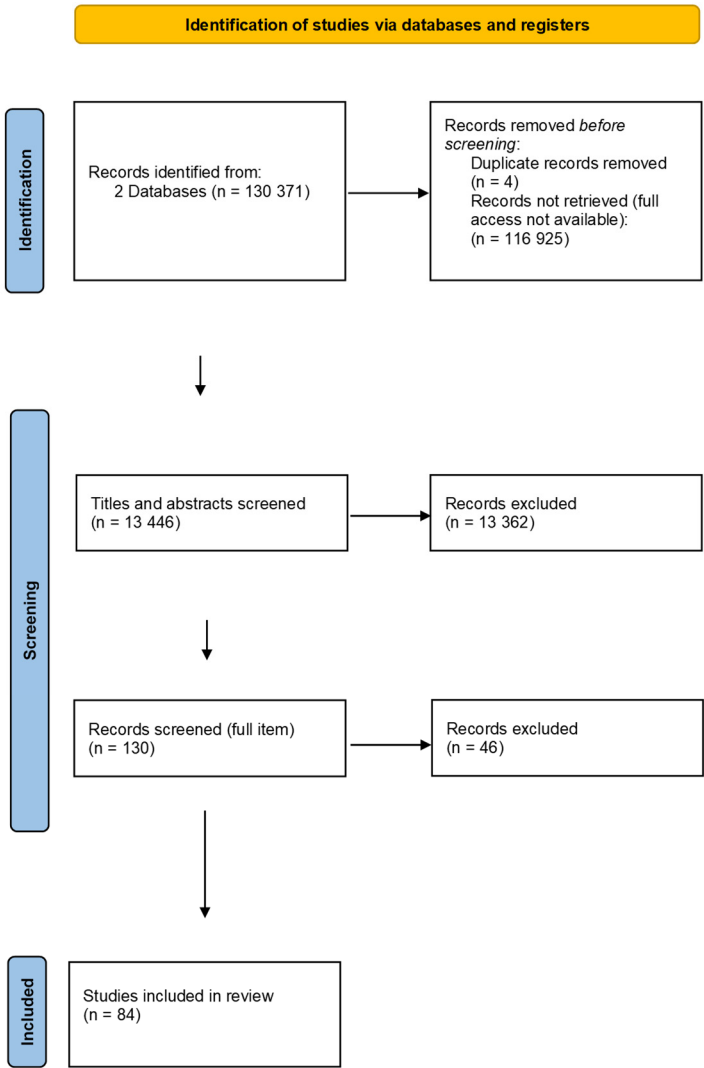
The literature review includes all studies in English, qualitative and quantitative. There were no specific restrictions on the studies involved, so book sections and articles published in professional and academic journals were used.

Before we determined the final search formula, we tried several search terms and combinations. The search “school effectiveness” was too broad and for example “school effectiveness theories” or “school effectiveness factors” was too narrow. We were also interested in the term efficiency, among effectiveness, so the following final search term was determined: (school AND effectiveness) OR (school AND efficiency)) AND (theories OR research OR factors).

In the first phase of searching, we included descriptors and searched for the literature with the final formula, mentioned before.

Both databases have different options for searching studies, which is the reason that searching was individually adapted to our interests. With the already mentioned search formula, we got 130 371 results. The resources to which we don't have full access were excluded and the final number of search results decreased to 13 446 relevant items.

In the second phase of the literature review, we reviewed all the titles of the searched items and collected 130 possible relevant studies for our research area. We excluded 4 duplicates. After we read all selected articles, we excluded the irrelevant and the final number of included studies in the systematical literature review was 84. The description of those articles is in the section Results. For a more visual picture of the search process for the literature review, you can see the PRISMA diagram in Figure 1.



**Figure 1.** PRISMA diagram for the search protocol and the inclusion and exclusion of reviewed articles.

**4. Results.**

With the literature review in the area of school effectiveness, we identified key themes and provided theoretical guidance for further implications for effective schools. The aim of this study was to discover and define which are the key factors that influence the effectiveness of school and students’ achievements/outcomes. A few categories were exposed within school effectiveness; teacher effectiveness, effectiveness in digital/online education, and one of the categories described efficiency of school. In the different items that we reviewed, some key factors which have a statistically significant impact on school effectiveness and student achievement were exposed in several studies. Factors such as school culture, supportive climate in the classroom, positive class climate, the use of digital sources, strong and firm leadership, effective leadership, flipped classroom (FC), schools’ economic, social, and cultural status, the attitude of principals, teachers, and school counselors, organizational climate, the aspects of cooperation, inclusion in decision making, teachers with more years of experience, collegial support, collegial leadership, teacher collaboration, the level of participation in decisions, willingness to participate, treat students with respect, and care about their students’ problems, high teacher-ratings on leadership and supervisor support of teachers.

“Student achievement mostly depends on the performance of the student in early education” [35] (p. 12). The majority of reviewed studies mostly discussed school-level factors. Thrupp in [3];

argues that the background characteristics of students are often overlooked. "School performance is usually expressed in terms of average student achievement by the school" [3], (p. 255). School climate is detected as one of the most important factors for school effectiveness [37–41,43] and studies indicate the significance of school climate on teacher commitment [36,43–45].

#### 4.1. *Positive school climate and school culture*

A positive school climate is essential for school effectiveness. Khan [36] proposed that it would be worthwhile to develop a positive organizational climate strategy to improve teacher commitment and promoting a positive school climate is important for the improvement of school effectiveness in general [38]. Improving school effectiveness is not the role of only school principals, but it requires support from all stakeholders including policymakers, principals, deputy principals, teachers, and parents [38].

Also, school culture predicts school effectiveness, and the school culture has stronger relations with school effectiveness than the teacher empowerment has [46]. "A school should have a culture that values the professional development of its teachers, collegiality, collaborative leadership, and teamwork to be effective" [46] (p. 340). Karadağ et al. [47] argue that high performing schools have strong school culture and spiritual leadership characteristics compared to low-performing schools. The results of their study show the impact of school culture and spiritual leadership on academic success. Ismail et al. [30] also claim that the school culture has a significant influence on school effectiveness. "If school leaders want to shape a new culture, they should start with an assessment of the climate. If the culture is ineffective, there are probably climate issues that were missed before they became rooted in the culture" [48] (p. 58). The school should have a culture that "values the professional development of its teachers, collegiality, collaborative leadership, and teamwork to be effective" [46], (p. 340).

#### 4.2. *Teacher effectiveness*

Teacher effectiveness is also known as one of the most important factors for predicting school and student effectiveness [35,50–53]. Not significant factors in explaining differences in teacher effectiveness estimates are student gender and students' language identity, claim Aslantas [35].

Effective teachers provide a positive school climate, collaborate with colleagues and analyze student data. A positive impact on student achievement is associated as well with years of teaching experience [52]. The quality of interactions between teachers and students is also very important. LoCasale-Crouch et al. [54] argue that teacher-student interactions are important to students' school outcomes (it affects their engagement, academic performance, and motivation). Independent of overall interaction quality, students with less consistency in their interactions with teachers had more conflicts with them.

School effectiveness is positively correlated with the teachers' level of participation in decisions and willingness to participate. Teachers reported that they don't feel enough included in the decisions of the administration and they are aware that the administration has an important role. It is therefore very important to increase the level of participation of teachers in decisions [55]. Yıldırım [56] claims that organizational cynicism (OC) indirectly affects perceived school effectiveness (PSE) through Involvement in the decision-making (IDM) process and it may reduce perceived school effectiveness by reducing teachers' participation in school decision-making. OC has a statistically significant negative effect on PSE, as well as on IDM. IDM has a statistically significant positive effect on PSE [56]. Gülbahar [57] (p. 15) researched that "the perceived supervisor support among teachers is positive on school effectiveness perception, engagement to work and job satisfaction; and negative on organizational cynic attitude".

Javorčíková et al. [58] analyzed the motivation level of teachers in primary schools. Supervisors' approach is important for teachers' positive motivation, as well as the atmosphere in the workplace, teamwork, fair system and salary. Khan [36] on the other hand tested the impact of organizational climate on teachers' commitment. Factors of school climate are directly connected with school effectiveness and Khan researched how it is associated with teachers' commitment. He did a

regression analysis and argued that the school climate has a significant influence on teacher commitment. Also, collegial leadership and institutional vulnerability are predictors of teachers' commitment. The teacher's professionalism and academic achievement failed to be the predictors of the teacher's commitment. The study proposed that it would be worthwhile to develop a positive organizational climate strategy to improve teacher commitment [36].

#### 4.3. *Strong leadership*

Many authors agree that strong instructional, school, academic, collaborative, and collegial leadership has a significant influence on the effectiveness of school [36–38,40,43,45–47,51,59–71].

Reynolds and Teddlie in [37], (p. 2) “summarized that effective schools were characterized by nine process factors: effective leadership, effective teaching, a pervasive focus on learning, a positive school culture, high expectations for all, student responsibilities and rights, progress monitoring, developing school staff skills, and involving parents”.

Professional development is a dimension of school culture. Gülşen and Çelik [46] tested the correlation with school effectiveness, and professional development was the most predictive variable. The other significant predictors were collegial support, collegial leadership, unity of purpose, self-efficacy, decision-making, and teacher collaboration. The following variables were not statistically significant in explaining the school effectiveness: the learning partnership dimension of school culture and status, impact, autonomy, and professional growth dimensions of school participant empowerment.

#### 4.4. *Technological resources and digital literacy*

The systematic literature review includes many articles that discuss technological resources and digital literacy as important factors that can be effective in providing positive effects on education. It is necessary that teachers need to receive more support and training for using digital resources in education. Teachers partly use digital sources and most of them don't see it as a workload. Teachers see the usage of digital sources as motivating student engagement in education and as having a positive effect on student success and positive trends in education [72,73].

The studies in the systematic literature review also touched on online education and distance teaching and learning, since there was the COVID-19 pandemic during the research period so we can expose some issues related to education during the coronavirus disease (COVID-19) [74–77]. The experience of online distance learning (ODL) was new for the students and teachers, and they faced some issues related to the lack of tools and sources, and poor Internet connectivity to access the virtual classes. Despite some difficulties, the teachers and students reported that ODL also has many positive aspects that help working teachers and professionals to continue higher education and professional development [74].

Zou et al. [75] found that it is important for teachers that have an opportunity for lots of training, to get more skills and be more confident so their online teaching could be more effective. In general, in this study, the majority of students and teachers were satisfied with online teaching during the pandemic, and they reported that in general it was effective. Basar et al. [76] argue that tools and sources were not a problem for students, they have computers and an internet connection, and also the ability and comfort to use computers were high. The main problem for students was the lack of motivation for online learning. The majority of participants in the study agreed that face-to-face teaching is very important. The authors also exposed “the importance of well-equipped facilities and a stable internet connection for effective learning” and that the “support within school communities, and among parents and school administrators, is vital to ensure the success of online learning”. “While online learning has been proven to support the health of students during the pandemic, it is not as effective as conventional learning”. [76] (pp. 76, 119, 128).

However, online education is nowadays becoming more included in school systems so we must increase the effectiveness in that area of learning. The teachers who were educated beforehand and used the technology before the pandemic were more self-assured and had fewer problems with the transition [75,77–79].

#### 4.5. Flipped classroom

Through systematic literature review there are a few authors that researched the learning method of Flipped classroom and tested the association with school effectiveness [80–84].

The flipped classroom is a strategy of active learning where the student is in the center of teaching, and it gained popularity in the recent decade. Authors like Mok and Gilboy et al. in [82] argue that compared to traditional pedagogical teaching, students positively accept the strategy of a flipped classroom with more enthusiasm and motivation for learning. On the other hand, Atteberry, in [82] described the preliminary study of four professors which claims that flipped classroom didn't improve students learning, the difference was not significant. The method Flipped Classroom (FC) is a digital teaching method, the courses are online through learning applications and are supported by digital media, for example learning videos and simulations [80].

Weiß and Friege [80] (p. 315) listed several definitions of Flipped classroom concept, from different authors:

“An inverted (or flipped) classroom is a specific type of blended learning design that uses technology to move lectures outside the classroom and uses learning activities to move practice with concepts inside the classroom” Strayer (2012, p. 171).

“We define the flipped classroom as an educational technique that consists of two parts: interactive group learning activities inside the classroom, and direct computer-based individual instruction outside the classroom” Bishop & Verleger (2013, p. 9).

“Flipped Learning is a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter” Association of Flipped Learning Network (2014, p. 1); Bergmann & Sams (2014, p. 14)“.

There are not yet clear conclusions if the method of the Flipped classroom contributes to effectiveness. This strategy of learning brings many benefits and on the other hand students and teachers face new challenges, students have to be well organized for self-learning and for learning at home. Although the research on that theme has grown in the last few years, there is a lack of publications with relevant publications that meet scientific standards [80].

The flipped classroom is an effective method that increases students' engagement, and most students prefer this method of learning. But on the other hand, it also has some disadvantages. The strategy did not bring better scores for students who were top-scored. They did not prefer the method, but it “helped improve the grades of students who were at the lower end of academic performance” [81] (p. 2). Knežević et al. [84] found a positive relationship between the method and effectiveness, the strategy of Flipped classroom brings higher results than the approach of conventional teaching and learning.

#### 4.6. The efficiency of schools

The articles in the systematic literature review included the efficiency of schools [74,85–89]. Here we can include financial status of the school (budget), the number of employed staff at the school (teaching staff) and school's physical infrastructure [90]. “Efficient educational institutions are those that can use their inputs optimally to achieve maximum possible outputs. If the output is fixed, efficiency refers to minimizing the use of inputs to achieve the output” [90] (pp. 1, 2).

The study by Thompson et al. [85] showed that total student enrolment is a significantly essential and positively affected factor for efficiency rating for school districts. A significant negative influence on district efficiency scores has the percentages of nonwhite students and of economically disadvantaged students. The most used method for measuring technical efficiency is that we compare inputs and outputs in many educational units. This method is called “Data Envelopment Analysis” (DEA) developed by Charnes et al. in [88] (p. 2). Halkiotis et al. [88] measured the degree of technical efficiency of high school, and they found out that it is necessary to improve working conditions for teachers and reduce stress. The study results showed that a significant number of teachers did not

complete their compulsory weekly teaching schedule. Furthermore, it is essential to develop healthy competition between students by having a larger average number of students per class.

#### 4.7. Sociodemographic characteristics

Sociodemographic characteristics have been identified as important factors that contribute to school effectiveness. Ramberg and Modin [59] found that schools with a high proportion of students with immigrant backgrounds tended to have lower levels of academic achievement, possibly due to language barriers and cultural differences. Şirin and Şahin [91] also noted that students from low-income families may face more challenges in their academic performance and school engagement, which can negatively impact the overall effectiveness of schools.

However, Hirschl and Smith [92] argued that the relationship between socioeconomic status and school effectiveness may not be straightforward, as schools in high-poverty areas may have higher levels of student motivation and community involvement, which can offset the negative effects of poverty. Murwaningsih and Fauziah [93] further highlighted the importance of considering gender and ethnicity in understanding school effectiveness, as these factors can influence student achievement and experiences in different ways.

A study by Rumberger et al. [94] analyzed data from the National Longitudinal Survey of Youth and found that socioeconomic status was a strong predictor of high school graduation rates. The study also found that students from low-income families were more likely to attend schools with fewer resources, which may contribute to lower academic achievement.

Overall, these studies suggest that sociodemographic characteristics play a significant role in school effectiveness, but the relationship may vary depending on specific contexts and populations.

### 5. Discussion and limitations of systematic review

As shown in the previous section (Results), there are many factors contributing to school effectiveness. Some of them can be seen from the perspective of individual students' levels (e.g. sociodemographic characteristics), however also those "individual factors" are often directly or indirectly associated with within-school factors which are attributed to teachers and school efficiency (e.g. effective teaching, effective school or classroom leadership etc). And this is not a surprise as Creemers and Kyriakides [95] have already proposed that a new, dynamic model of effectiveness must: a) be multilevel in nature, b) assume that the relation of some effectiveness factors with achievement may be curvilinear, c) illustrate the dimensions upon which the measurement of each effectiveness factor should be based and d) define relations among the effectiveness factors. Their testing of the dynamic model at the school (and further system) level places most attention on describing detail factors associated with teacher behaviour in the classroom [95].

The review of school effectiveness is a complex and multifaceted topic that has been the subject of extensive research and debate. There are many different factors that can contribute to the effectiveness of a school, including the quality of teaching, the curriculum, the leadership and management of the school, the socio-economic background of the students, and the level of parental involvement, school culture and climate. The quality of the school seems to be strongly linked to the safe and stimulating learning environment. There is not a clear division in the definition between a safe and stimulating learning environment, furthermore, the concepts of a safe and stimulating learning environment are complementary and partly overlap with the concept of school culture and climate as cited by Dumont et al. In [96]. Standards defining the school culture and climate or a safe learning environment, highlight the following areas: "inclusion, safety, relationships, information and communication, educational strategies" [96], (p. 9).

One important finding that emerges from the literature is that the quality of teaching is a very important factor in school effectiveness. Research has consistently shown that effective teaching practices can significantly improve student outcomes, including academic achievement, engagement, and motivation [97,98]. This underscores the importance of ensuring that teachers have the necessary skills, knowledge, and support to deliver high-quality instruction.

Another key finding is that school leadership and management can have a significant impact on school effectiveness. Effective leadership can create a positive school culture that promotes learning and growth, fosters collaboration among staff and students, and ensures that resources are allocated effectively [2,[99]]. The socio-economic background of students is also an important factor to consider when evaluating school effectiveness. Research has shown that students from disadvantaged backgrounds are more likely to experience academic difficulties and that schools that serve these populations face unique challenges [100]. In order to be effective, schools must be able to provide these students with the support and resources they need to succeed. Important factors in the growth of students' academic success (university students) are sociodemographic characteristics, variables such as gender, the university where they studied, fathers' education and the way they chose their department [36].

There are several limitations to the review processes used in this literature review and also limitations of the evidence included in the review. One limitation is the possibility of publication bias. This review only included studies that were published in peer-reviewed journals only in four databases and we only included items to which we had full access. Another limitation is the potential for methodological differences across studies. The studies included in this review used a variety of research methods, such as case studies, surveys, and quantitative analyses, which could have resulted in variations in the findings. Furthermore, studies may have used different definitions of school effectiveness or different measures of school inputs and outputs, which could make it difficult to compare findings across studies. Many of the studies included in the review relied on self-reported data, which may have introduced bias and inaccuracies in the findings. This review was limited by its focus on English-language studies published within the last five years. This may have excluded relevant studies published in other languages or earlier than 2016. Additionally, the rapid pace of change in education policies and practices means that this review may not reflect the most up-to-date research in the field.

## 6. Conclusions and future directions

In conclusion, the effectiveness of schools is a complex and multifaceted concept that can be measured through various indicators such as academic achievement, student engagement, and teacher satisfaction. The review of school effectiveness has revealed that several factors contribute to effective schools, such as strong leadership, effective teaching practices, a positive school culture, and parental involvement. Additionally, school resources, such as funding and facilities, can impact school effectiveness, particularly in under-resourced communities.

Leadership is a crucial factor in promoting student success, as noted by multiple researchers [2,51,70,101,102]. Leaders who create a positive school culture and prioritize high-quality teaching practices are more likely to create a learning environment where students can thrive. Furthermore, parental involvement has been linked to improved student achievement, as noted by Akbar et. al. [103] and Fan and Chen [101] and can be facilitated through strategies like family engagement programs and clear communication between families and schools.

Teacher quality is another critical factor in student learning and achievement [105–107]. Teachers who are knowledgeable, experienced, and effective in using instructional strategies can significantly impact student outcomes. Effective curriculum and instruction, aligned with standards and assessments, and delivered using evidence-based instructional strategies, are critical in promoting student learning and achievement [108,109].

Moreover, the inclusion of all students regardless of their backgrounds and abilities can promote a sense of belonging and engagement, which can positively impact their academic performance and social-emotional development, as noted by Ahn and Davis [110]. Additionally, a positive school climate is essential for promoting student learning and achievement. A safe, respectful and supportive school environment can positively impact student outcomes [36,42,111].

Finally, adequate resources, including funding, facilities and technology, are essential for promoting student learning and achievement, as noted by Bhutoria and Aljabri [90]. It is important to note that school effectiveness is a complex and multifaceted concept, and that different factors may

be more or less important depending on the context. Answering the research question, the literature suggests that effective schools are characterized by strong leadership, high-quality teachers, effective curriculum and instruction, parent and community involvement, a positive school climate and adequate resources. These factors work together to create a supportive learning environment that promotes student learning and achievement. However, by studying and understanding the key factors that contribute to school effectiveness, educators and policymakers can work to create environments that promote student success and support all students in reaching their full potential. By implementing evidence-based practices and strategies that prioritize strong leadership, effective teaching practices, parent and community involvement, a positive school culture, and adequate resources, schools can provide high-quality education that meets the needs of all students. Overall, the literature suggests that school effectiveness is a multidimensional concept that requires a comprehensive and holistic approach to achieve. By understanding the various factors that contribute to school effectiveness and implementing evidence-based practices, schools can provide high-quality education that meets the needs of all students.

While this literature review provides valuable insights into the factors that contribute to school effectiveness, its findings should be interpreted with caution, given the limitations of the review processes used. Future research in this area should consider addressing these limitations and building on the findings of this review to provide a more comprehensive understanding of school effectiveness. Despite these limitations, this literature review provides a valuable summary of the current research on school effectiveness and efficiency, highlighting the key factors that contribute to these outcomes. Future research could build on these findings by addressing some of the limitations of this review, such as conducting more comparative studies across different contexts and using consistent measures of effectiveness and efficiency.

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