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Review

Keeping the Parents outside the School Gate—A Critical Review

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Abstract: The existing evidence shows that parental engagement is one of the most effective educational interventions. Most parents, carers, and teachers are aware of that and wish to engage with their children's education. However, most parents are still only peripherally involved through parent-teacher evenings, school activities, or by helping their children keep up with their homework. In this review paper, we summarize the evidence about the impact of parental *engagement*, as opposed to involvement, on the learning of children. Via that, we critically look at the design choice of most western mainstream public education systems to distance parents from their children's education, which, as the review results indicate, can be detrimental to children's learning. Based on these results, we reframe parental engagement in the light of two global shifts: (1) the implications of the school closures during the COVID-19 pandemic for the role of parents in their children's learning; and (2) the increased use of educational technologies for learning, and specifically, the rise of artificial intelligence (AI) technologies. We conclude by calling for a renewed conversation about parents' and families' roles in their children's learning and their interface with schools and teachers.

Keywords: parental engagement; artificial intelligence in education; COVID-19

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1. Introduction

The idea of a mandatory-attendance public education system based on out-of-home institutions called schools has its roots from at least the 16th century [1]. This initiated the daily routine of school-aged children exiting their homes every morning, leaving their parents, cultures, and familial beliefs behind to go into schools. Once there, they adhere to the schools' standards of curriculum and conform to their behavioural schemas, rewards, and implications. This journey was, and still is, designed and realised by various stakeholders: such as governments, employers, religious institutions, industry leaders, and education policymakers [1], each with their own agenda, led by their own political, economic, or pedagogical interests, not all of which have to do with children's wellbeing and learning.

The original aims of national educational systems from around the world differed in time and location. These ranged from producing obedient soldiers in Prussia to efficient assembly line workers in the US during the 19th century, to eradicating the original culture of "first nation" children in Australia in the 20th century, and onto today's national education systems in western countries such as the US and the UK, who strive to prepare young people as future members of a workforce, whose needs are hard to predict (see, for example [2,3]).

For the sake of brevity in this review paper, we will focus on the British mainstream, state educational system, although we believe our arguments could potentially be applied to many other western countries and systems. The UK schooling system is very diverse: there are privately and publicly funded schools, selective and non-selective, mainstream

and special, religious and non-religious, boarding and day schools, home schools, and hospital school provisions, and there are also “unschoolers”, who do not attend school at all. To allow us to be specific, though risking some over-generalization, we focus on comprehensive schools in the UK, which the majority of children attend, i.e., publicly funded mainstream schools which take on a wide range of pupils.

Many aspects of the British modern schooling systems have been criticized over the years (see for example [4] and [5]), leading to significant changes within the main schooling system. For example, the last century saw a less religious curriculum, more humane discipline methods, and an expanding list of curricular subjects. However, the number of hours children are mandated (and enforced by governments) to spend learning formally outside of the sight of their family has only grown. Despite the increasing evidence strongly showing that parental engagement with children’s learning is one of the most effective and supportive ways of leading to educational achievement [6], schools are still designed in such a way that parents and carers are at best only peripherally involved in their children’s learning. For the sake of brevity, from this point on we will use the term “parents” to refer to “parents and other carers”. Parents are essentially required to remain both as external observers (not even fully equipped with the means to observe and be informed) and compliant with the authority of their children’s schools and other educational bodies.

In the eyes of UK law, it is the parents’ obligation to provide education to their children [7]. Section 7 of the Education Act 1996 states that it is the “Duty of parents to secure education of children of compulsory school age. The parent of every child of compulsory school age shall cause him to receive efficient full-time education suitable— (a) to his age, ability and aptitude, and (b) to any special educational needs he may have, either by regular attendance at school or otherwise”.

Thus, legally at least, it is the parents’ responsibility to ensure that their child receives a suitable education, “either by regular attendance at school or otherwise”, which leaves the implementation theoretically open to their discretion. In practice, this responsibility does not mean that parents are free to engage with their children’s education as they see fit, but that unless parents choose to take their children out of school, their responsibility is solely to make sure their children are attending it, whether or not this is the right educational setting for them. In fact, the Education Act 1996 (following the Elementary Education Act 1876) enforced threatening parents with (and applying) legal sanctions, such as fines and prison sentences on parents who fail to do so [8].

From a historical perspective, schools were set up by governments to compensate for what governments thought were the educational needs not met at home [9]. This conceptualization became an unquestioned status-quo and developed into seeing teachers as full authorities in children’s education (which is usually strongly coupled with making their career choices). In practice, this full authority on the schools’ side excludes parents from being part of a natural learning continuum of home and out-of-home learning experiences. Parents, not being “part of the solution”, can be therefore perceived as yet another source of “noise”, or disturbance in the way of schools to achieve the goals governments place for them [10]. Excluding “the noise”, we argue, leads to excluding cultural and other individual differences to a large extent, which feeds into the blockbuster educational model of one system fits all.

There is an ongoing rise in alternative schooling methods and a critical discourse (for example [5]), in the UK as well as in many other countries, addressing many of the design aspects of the mainstream western educational system. Some of these design aspects are argued to be a remnant of an old and irrelevant set of beliefs about children’s learning. Such criticism addresses topics such as the design of learning assessments using high-stakes exams, the need to let children co-design and self-direct their curriculum and to choose their own pace or ways of learning (for example, [4]). However, in practice, parents’ engagement, parents’ interfaces with their children’s learning, and parent-teacher partnership models are still rarely addressed. One of the commonest reasons for parents

to decide to take their children out of school is that they believe that the school is not meeting the needs of their children. These parents then find themselves facing very few and difficult alternatives other than taking their children out of school [11–14]. Statistics about persistent absentees, home-educated children, and off-rolled children in the UK support this tendency [15].

This paper's aims are to refresh the discourse about parents' engagement with children's learning and to challenge the existing design of the mainstream western schooling system in which parents are not considered an integral part of students' learning experience. As the evidence around this topic is already rich and strong, and meta-analyses and systematic reviews exist (for example, [16]), we bring a non-systematic critical overview of the current state of understanding of this topic. We re-evaluate the existing evidence in light of two major recent developments that are dramatically challenging the design principles of our education systems and provide opportunities for radical changes in schooling systems. The first development was the school closures during COVID-19, which evidently opened up a long-due discussion within many families about their trust in their schooling systems. The second development has to do with the increasing use of educational technologies and, in particular, artificial intelligence (AI).

One of the most prevalent arguments supporting keeping parents out of an active role in their children's education throughout the school years has to do with safeguarding. For example, many would rightfully argue that one of the roles of schools is to look after children while their parents are at work. There is hardly any evidence whatsoever that, in order to keep children safe, happy, and even learning, a compulsory curriculum, timetable, and coerced behaviour are necessary, or that parents should not have a say in how their children are kept safe. In fact, the evidence shows that many children may not be safe at school. Bullying, sexual harassment, and many other factors, which are shown to be hugely detrimental to children's mental health, result from the school environment (see for example, [17–19]). To that extent, some would argue that not all parents are able to contribute positively to their children's learning (or even generally to their upbringing), and that the exclusion of such parents from being active partners in their children's learning aims at providing children with an educational level playing field. In addition to the evidence that a "level playing field" may not be safe for some children, we would also argue that unfit parents should be assisted (or managed in extreme cases) by other governmental agencies, not by schools. A "level playing field" which disregards social and cultural differences can be detrimental to maintaining effective scaffolding and support for children's development. Bringing parents closer to their children's world (and vice versa), within a partnership with qualified teachers and pedagogical experts would only strengthen both the children's most immediate support system and the parents' ability to support their children. Gillen and Kucirkova [20], for example, have discussed how the lack of information teachers have about students' home life in the UK, and specifically about their families' digital literacies, contributes to the widening of the digital divide.

While this article is not intended to be based on a systematic literature review, we employed a traditional literature review methodology using heterogeneous sources rather than a specific set of databases to summarize the trends in the parental engagement body of evidence. Based on different derivatives and roots of search terms such as "parental involvement", "parental engagement", "school communication", and "school-parent partnerships", we generated a set of empirical and theoretical papers intended to give an extensive and contextualized image of this body of evidence. Papers were screened for relevance based on their titles, abstracts, and the validity of their findings. These papers' references were additionally checked for relevance using a forward snowballing approach [21]. This analysis produced a grouping of the evidence into four categories, which are developed in the four subsections in the "Summary of the current evidence" section: (1) debate about definitions, (2) the evidence from the students' perspective, (3) the evidence from the parents' perspective, and (4) the evidence from the schools' perspective.

In the rest of this section, we look at parents' engagement with their children's learning through the theoretical prism of Vygotsky's sociocultural theory. In the next section, "Summary of evidence", we review the existing literature on the subject organized into the four categories mentioned above. We start by discussing the debate around the commonly used definition of parents' involvement and parents' engagement, and then go on to discuss the evidence from the perspectives of the students, the parents, and the schools. Then, in the third section, entitled "Reality check: rethinking this design choice", we re-examine this design choice in the light of two global shifts, which have produced major ramifications on education systems all over the world. These are the school closures during COVID-19, and the use of educational technologies and, in particular, artificial intelligence (AI). We argue that AI might be harnessed to develop the idea of parental engagement. We end the paper with concluding remarks and suggestions for further work.

1.1. A Theoretical Perspective on Parents' Engagement in Their Children's Learning

In order to explore the complex and dynamic relationship between parents' engagement in their children's learning and children's development, we use a sociocultural theoretical positioning. This perspective originated in the work of Vygotsky [22] who considered social interactions with able adults and parents to generate a zone of proximal development (ZPD) for children. The ZPD refers to "the distance between the actual developmental level [of the child] as determined by independent problem-solving, and the level of potential development as determined through problem-solving under adult guidance..." [22] (p. 86). This distance creates a space that encourages children's engagement in learning and development activities as well as promoting their thinking processes that might not have occurred otherwise. An "able adult" in this context is the 'more knowledgeable other' [22]. The adult might be more knowledgeable in the sense that they know more, have more experience in learning and are able to support the child by scaffolding their learning. This can be achieved by mediating and adjusting the amount and type of support to the child's needs and abilities.

In the relatively long history of the ZPD, there is plenty of theoretical and empirical evidence that working with it can have a positive impact on children's learning and development [23,24]. Scaffolding, in the context of the ZPD, would be the main strategy, used by the parent or the teacher, to help the child "traverse" their ZPD, and essentially, if administered correctly, enable their effective learning. This theoretical position supports the idea that parental engagement in their children's learning would lead to improved learning and to children's further development, because it encourages children to practice, develop, and reinforce their learning capabilities with the support of the scaffolding from the more able adults.

Within the ZPD space and scaffolding, more recent theoretical considerations highlight the importance of action possibilities and learning affordances. Such theories promote the idea that certain contexts and scaffolds make some actions of children more likely than others, leading to different levels of impact on their learning and development [25]. Arguably, therefore, parents and teachers are associated both with different contexts and with different perceived possible actions, and also with different learning affordances for children. Diversification of the possibilities for actions and their learning affordances is likely to enable more opportunities for effective learning. Vygotsky [22] perceived learning as a socially mediated process, which is deeply affected by culture, beliefs and language. In addition, although teachers will potentially have more knowledge about scaffolding techniques themselves and how to implement them, parents are undoubtedly better situated to be familiar with their own child's current and potential developmental level, and their family and community cultural context. This enables the parents to make more appropriate decisions about what action possibilities are allowed, what learning affordances are provided and how these are aligned with their cultural values. We argue that when parents (and subsequently the children themselves) are not truly partnered with schools to drive children's learning, scaffolding is less likely to be optimally

designed. The sociocultural theoretical positioning that we put forward here would indicate that scaffolds themselves have only limited value for children's development and learning *per se* but are mediated through both their meaning as perceived by the learner and their intended meaning driven by the designers and practitioners of them. In addition, there is a risky gap in schooled children's ZPD that is caused by the disparity between the school and the parents' understanding of the child. These meaning-making and alignment processes for effective learning would benefit from, and indeed require, a strong parental engagement in children's learning.

2. Summary of the Current Evidence

This section describes the evidence found in the critical review under four headings.

2.1. Debate about Definitions

Today's discourse about parents' engagement in their children's learning is most often reduced to their (usually not very high) attendance at the parents' evenings that schools organize [26]. Surely, it is argued, if parents are not even fully committed to this minimal commitment of arriving once a term to get their child's report, not to speak about the even lower participation rate of volunteering in PTAs or baking cakes for fundraising events, how can we expect them to take on an active (rather than passive), central (rather than assistive) role [10]? The language used of parents as "assisting", "helping" or generally being "involved" (rather than "engaged") indicates the reality of today's schooling system, which "produces" parents who want to be engaged but often lack the confidence [27], are passive, uncritical, deprived of agency, and even denied responsibility [10]. "Parental involvement" therefore, implies parents taking part in something that is already done and decided on the school's terms. "Involved parents" are therefore expected to do as they are told, attend parents' evenings, hear the teachers out, and make sure their children are doing as they are told [28]. The term "involvement" has led to failed interventions, such as using financial incentives to persuade parents to participate in school events [29]. "Parent engagement", on the other hand, is aimed at parents influencing the children's overall actions, beyond just school outcomes [30]. Parental engagement implies parents partnering with the school to support the children in their learning, homes being integral to children's education and participatory processes [31]. This, in turn, has been shown to lead to better learning outcomes [29]. The question then, of why parents are not showing up at parents' evenings, could bring us a long way towards the issue of whether they can do significantly more than that.

Other terms central to this debate are school-parent "communication" versus "dialogue". "Communication" usually means parents are on the receiving end of information about their children, while a "dialogue" requires active participation by both parties [32] and implies parents that are able to act in a beneficial manner in relation to their children's learning [31]. The introduction of "communication" technologies into schools is a symptom of the same problem: teachers are busy, parents are a source of noise, and therefore technology's role in this respect should be to streamline schools' means of transferring information to parents [32]. "Communicating" might sound easier within the current conceptualization of parents' involvement, however, the evidence leading to educational achievement is in favour of a continuous dialogue [29].

The questions to be asked here are which of the concepts above (involvement vs. engagement, communication vs. dialogue) better serve every child's ZPD? In the next sections, we establish the evidence needed to answer these questions. Following this evidence, there is a more pragmatic question regarding how the current system can cope with the new measures that need to be put in place to better support those concepts. Although this is not the focus of this paper, we appreciate that this is a crucial question, and we, therefore, discuss it in the paper's concluding remarks.

2.2. *The Evidence from the Students' Perspective*

As with many educational interventions, sound evidence about parents' engagement across many contexts of learning is limited: especially in terms of international coverage (a lot of the studies are US and UK based), and in terms of the variety of the "parental engagement activities" examined. For example, many studies are focused on home reading interventions [33]. However, in comparison to other educational interventions, parents' engagement shows one of the strongest effects on children's achievement [34], including standardized test scores, enrolment in challenging programs, earning more credits, school attendance, improved behaviour, social skills [35], and improved child literacy [36]. Studies have shown both correlational (for example, ranging from $\geq .49$ to $.73$, [16]) and causal [37] effects, which are rarely seen in education. Moreover, out of 13 measures of parents' aspirations, attitudes, and behaviour (namely parental involvement, parental expectations, parenting styles, parent substance abuse, individual aspirations, individual attitudes, individual motivation, self-concept/self-esteem, self-efficacy, participation in extra-curricular activities and paid work, individual poor behaviour, and substance abuse), See and Gorard [37] have shown that parents' involvement was the only one yielding sufficient evidence for a causal influence on learning achievements.

Overall, the evidence around parents' engagement goes way beyond the traditional definition of "parental involvement" which speaks of a relatively passive role, compliant with the traditional school expectations of parents in their children's learning, and into activities that are carried out in the context of home-school partnerships [38]. Parental engagement has also shown a strong potential for closing the achievement gap between the children of low and high-income families [36,39]. This effect is not moderated by the parents' socio-economic background [40], ethnicity, and educational background [35]. However, there is evidence showing how parents of minorities can positively affect their inclusion in STEM, from a proximate cultural point of view [41]. There is disagreement on whether there is an age group for which the effect is strongest [42]; however, there is a general agreement that the effect is stronger in literacy than in maths, and with students of lower attainment rather than those with higher attainment [33].

In general, increased involvement, as opposed to engagement, on the parents' part may not always be better. It also has to do with the types of parental involvement activities, their parenting style, and the children's developmental stage. For example, when parents use controlling ways, using negative affections or beliefs [43], their involvement might not be beneficial. Evidentially, most supportive activities are shown to positively affect students' achievement, except for parental help with homework [42]. The types of the most effective engagement activity typically change with age. For example, reading with younger children was found consistently to be effective, while less direct strategies, which reflect on academic socialization (such as linking schoolwork to young people's future lives, discussing learning strategies, and future options) are most effective with the developmental stage of early adolescence [16].

2.3. *The Evidence from the Parents' Perspective*

The evidence about how parents see their role in their children's learning stems, to a large extent, from their understanding of what parents' engagement "should" look like, and from the kinds of partnerships that schools are currently enabling. Therefore, it is not surprising that many studies have collected evidence about parents' involvement rather than engagement. Although they are very different from each other, the evidence about parents' involvement can tell us something about parents' willingness to also be engaged. For example, parents' involvement, as measured by attendance at parent-teacher and other school meetings or by volunteering, generally increased overall between 1996 to 2016, where a large majority of parents were involved, but decreased as their child went to secondary school and above [44]. Parents' involvement varies across different backgrounds, with those facing all sorts of barriers having less scope for involvement. For

example, involvement has shown to be lower for minorities, for parents with lower levels of education [44], for parents with lower income [45], for fathers rather than mothers, and is shown to be higher for parents of children with special educational needs [27]. Similarly, parents' assistance in homework is lower in poorer families [45], which as we noted before, has not shown to be a significant effect on children's achievement.

Whether or not they actually attend school events, most parents do want to be involved [27,30,46], and their patterns of involvement and engagement are affected by the extent to which schools initiate a welcoming and respectful connection and engage in maintaining meaningful relationships with them [47]. In fact, parents often want to be more involved. For example, [48] has shown that 85% of the parents she studied in the UK wanted to be more involved. However, as long as their ability to take an active part in their children's learning is limited to "involvement", e.g., taking part in school activities, rather than taking an active role at home, with school or within the community, their influence is limited. This is a barrier that is even stronger for parents from certain ethnic minorities and poorer socio-economic groups, who can be more reluctant (for many reasons) to attend schools' activities [49]. Not only might parents from these vulnerable groups find it harder to find the time and the means to attend the school, but they would also be more likely to experience language and cultural barriers that would affect their self-esteem and their self-efficacy as parents [38]. Parents of students with special educational needs, who anyway often struggle to find their voice within the schooling system [50], reported lower self-efficacy in their ability to support their children and would therefore also feel less welcomed and supported by schools [51]. It might be then, that parents' ability to support their children, along with their self-efficacy, would increase if their "involvement" became "engagement", if learning had a respectful place at home, rather than just in school, and if a partnership model were employed between home and school, rather than a model of parents solely conforming to schools' terms and conditions.

2.4. The Evidence from the Schools' Perspective

The evidence regarding parental engagement from the perspectives of students and their parents is strong: parenting that includes an active supportive role in children's learning is effective when carried out from an empowered place and when learning is experienced as part of a school-home-community continuum [38], rather than parents being pawns in an external institution's rigid structure. In other words, at least theoretically, a shift of weight into a partnership model should be in schools' interest (assuming all the stakeholders are interested in what's best for children's learning). Yet, although most governments and schools identify parental engagement as a priority area, they still hold tight to the "parental involvement" conceptualization. Moreover, schools put a lot of effort into setting up initiatives to encourage involvement, most of which result in very little efficacy [52]. For example, very few of the newly-established governing boards [45], providing parents with information or materials, parents' evenings, and information about community activities took the step into "engagement", to actively integrate and partner with parents and the community in a two-way dialogue [42].

Clearly, crossing the fence from involvement to engagement might be challenging for schools. There are many barriers, such as a lack of time and resources from the schools' side to invest in interventions that are not short-term, together with language barriers, childcare issues, and literacy from the parents' side [49]. Furthermore, for all parents to be able to take a supportive role, there would need to be an element of training taking place [49]. Of course, there is also the key element of trust. Partnership models cannot be formed on the basis of perceiving parents as noise, as interfering, or by perceiving teachers as the sole authorities. For an effective partnership to take place, open, honest, and transparent communication must be established between both sides [38].

Đurišić and Bunijevac [38] discuss models of parent-school relationships. The five models below (and variations of them) can be seen in many schools today and can be

placed on a scale of teachers' and parents' agency. The first three models were suggested by Swap [53]:

- **The protective model** is based on the perception that parents are mainly interfering with teachers' work. Therefore, to protect schools, parents are left outside the school gates, and concentrate on their role of making sure their children go through those gates every morning, return home safely at the end of the day, and do their homework.
- **The transmission model** is based on the notion that teachers are the sole experts and decision-makers, but parents can also be a resource to be utilized. This model assumes that teachers have the right expertise to guide parents and set productive relationships, and that parents are happy to play a subsidiary role, which on the one hand might burden them, and on the other hand, does not offer them agency beyond assisting teachers.
- **The curriculum-enrichment model** is similar to the transmission model in the sense that teachers are still the decision-makers. However, in this model, schools do recognize the expertise of some parents. The channel through which parents are encouraged to contribute is by enriching the curriculum through material or instruction in their areas of expertise. This model assumes that teachers would take a coordinative role, that parents' contributions are well-regulated, and again, that parents are happy to contribute their time without being offered anything close to agency with regards to their children's learning.

To various extents, these three models are based on the "parents' involvement" conceptualization. The next two models were suggested years later by Hornby [54], and are closer to conceptualizing engagement:

- **The consumer model**, which is mainly prevalent in private schools, where parents pay fees, and therefore can be treated as customers. This is based on the assumption that teachers are the experts, but if parents are not happy, they will take their "business" elsewhere. In this model, schools provide a "service", while the agency and the decision-making are left in the parents' hands. Although there are many reasons to believe that schooling should not be considered a business, and that private education keeps us away from aspirations about equitable education and closing the opportunity gaps, this model does provide parents with more agency and the ability to develop self-efficacy in their parenting.
- **The partnership model** is the only model that perceives a balanced power dynamic. In this model, teachers are considered to be experts on education and parents are viewed as experts on their children, and the goal is to form a partnership that is centred on who the child is.

3. Reality Check: Rethinking this Design Choice

The dissonance between the current evidence about parents' engagement and the current design choices of our schooling systems with regards to the parent's role in it, is far from being resolved. Although the current model is based on a misconception about young people's learning which starts and ends within the school's premises [6], the reality beyond the school gates does constantly change and is redefining the boundaries (or lack of them) of learning. To demonstrate this point, we discuss two global phenomena or trends that are changing the reality of learning fundamentally: school lockdowns due to COVID-19, with its long-term implications, is the first, and the advancement of educational technologies, specifically artificial intelligence, is the second. Through these two examples, we wish to reflect on how parents' engagement with their children's learning, as important as it always was, is becoming even more so, and requires a far-seeing debate about the design choices of the western world's mainstream schooling system, such as keeping parents outside the school gates (metaphorically speaking).

3.1. School Lockdowns due to COVID-19

With the outbreak of the COVID-19 pandemic, an unprecedented lockdown of schools all over the world forced millions of families to experiment with something that was very far from their reality until then. In addition to the many other factors disrupting their lives, children's learning became something parents experienced at first-hand, and had some (although very limited) control over [55,56]. This sudden sense of educational responsibility, along with the need to become teaching assistants in the blink of an eye, put many parents in a stressful state [57]. Among other implications affecting parents within this "biggest social experiment ever", parental engagement went under a new magnifying glass, and its importance became even clearer than before [58]. As time went by, the effect of the initial shock somewhat reduced, and most parents began to realize that they had an opportunity to maintain better relationships with their children [59], get to know their learning experience better and become more engaged [60].

Despite many external factors causing increased anxiety and stress levels for children (such as the pandemic itself and being isolated from their broader families and friends for long periods of time), many students were reported to have experienced decreasing levels of anxiety and stress, due to being away from school [61]. Specifically, students with special educational needs reported reduced anxiety due to reduced sensory issues and a more inclusive [62] way of learning [63]. In fact, with time, some students and their families found the home environment to be more conducive to their learning, especially for mental health reasons, even if the parents did not have any pedagogical skills or training [64]. As most schools were not designed for a shift in terms of the home-school continuum, for many families, the only alternative to getting back to how things were, became homeschooling [65,66]. Even though most parents are not trained teachers, homeschooling is generally associated with positive learner outcomes in terms of academic achievement, social, emotional, and psychological development, and success into adulthood, including higher education [67]. Thus, although homeschooling is often associated with financial, logistical, and other burdens on families, it presents an (almost the only) alternative to schooling [68], that does not leave the parents uninvolved. In an uncompromising world of placing education either completely outside or inside the home, many began to choose inside.

A steady rise in the number of homeschoolers was evident before the pandemic (see, for example, [69,70]). However, this rise has been significantly accelerated by the pandemic [71], with an especially significant rise in the black communities [72], which was also affected by another important global shift, resulting from the Black Lives Matter movement. The number of families choosing to take their children out of school has increased around the world (in countries where homeschooling is legal): for example, in Australia [73], in the US [74,75], and in the UK (see [76] and the official statistics about the rise in "persistent absentees" (10% or more missed) in England [77]; see also in SquarePeg statistics [15]).

3.2. Technological Advancements

Whether children or adults, technology is all around us, all day, every day. If twenty, or even fifteen years ago it was not an inherent part of our family lives, friendships and learning, it is now. Not only does technology, on its own, take an active part in children's ZPD now, but it is also one of the most effective means to mediate between the adults who take an active role in children's ZPD [20]. If we are to look at the ways in which the boundaries between home and school can be blurred [78,79], or at how learning outside of school can be extended beyond just homework assignments and other curriculum-based activities, we cannot afford to ignore technological advancements [80]. Whether formal learning, informal learning, or learning by playing [81], whether for remote or in-school learning, whether having streamlined access to devices and to the Internet at home or not, and

whether planning on using technology to some extent in a future career or not, technology has changed the way we learn and teach, and is going to continue to do so.

Within schools, digital technologies are used to support children's learning by providing access to rich digital media resources using virtual learning management environments, and by collecting data and monitoring students, including academic progress, attendance, and behaviour [82]. On the other hand, technological advancements have enabled home-schooling and unschooling students' and parents' access to a wealth of knowledge and learning materials, as well as to teachers and co-learners across the globe, which makes learning at home a much more sustainable option than it used to be [83].

The use of technology for learning faces many challenges at home and at schools, such as teachers', parents', and students' barriers to digital literacy, homes', and schools' financial barriers, and anxieties about the safe use of technologies. Having said that, children's home interactions with technology affect their effective learning in the classroom [20], and in general, the literature reports more positive than negative influences and correlations between the use of technology and learning (see, for example, [84]). In addition, most parents welcome collaborative relationships with schools with regard to technology use in education [20]. Osorio-Saez et al. [80] have shown that when technology use is well-structured and supported, parents become more engaged in their children's learning, suggesting that technology could help narrow attainment gaps between students, in several ways, including by increasing parents' engagement. On the other hand, having access to technology is not enough on its own, and parents' engagement can decrease when they perceive the technological tools to be challenging to use [80].

Researchers have debated the core components of a productive home learning environment, all of which could be considered crucial elements in children's ZPD. For example, [80] suggested that home learning environments could be defined by three main elements: (1) parental engagement with children's learning; (2) the parent-child relationship and the emotional climate at home, a factor which is strongly influenced by parenting style and parents' beliefs and values; and (3) learning materials, with an emphasis on technology [80]. Clearly, these three elements can interact with each other or appear together. For example, Grant [82] shows how educational technologies can facilitate parents' engagement in a series of case studies.

The terminological debate mentioned earlier in this chapter between parental "involvement" vs. "engagement" and between school-parents "communication" vs. a "dialogue", has its implications for the type of educational technologies that schools might decide to use. An educational technology which is designed and based on "parental involvement" and parents-schools "communication" conceptualizations, would naturally focus its affordances on making sure parents are on the receiving end of school announcements and notifications. This kind of technology is designed to make sure parents can effectively play their role in assisting schools' plans with regard to their children's learning. Clearly, the relatively extensive deployment of "communication technologies" in schools alone tells us how widely accepted are the "involvement" and "communications" paradigms.

Reaching out to "parental engagement" and into a schools-families two-way dialogue state would be reflected in different kinds of technological affordances. Specifically, these affordances would be less focused on passing on information from the school and would require two-way communication, which might be less prescribed, based on more transparent information sharing and require a higher level of information processing. Clearly, these affordances could pose substantial demands on teachers' time, which in itself is already a major factor in teachers' burnout and mental wellbeing and is on the brink of breakdown in many state schools in the UK [85].

3.2.1. Artificial Intelligence and Parents' Role

We argue that some of the ways to address this huge barrier for teachers could incorporate the use of artificial intelligence (AI) in educational (AIED) applications, to enable a

whole new division of labour between teachers, families, and technology, and potentially offload a significant part of teachers' current burden. In their book, [86] suggest an analytical framework of the potential strengths and limitations of each of the stakeholders within any specific learning context, be it human teachers, the students themselves, or parents, as well as AI agents. They argue that using this analysis would enable the safe use of AI technologies within a restructured division of labour. This new division of labour could, in turn, enable a partnership model between schools and families, for example, by offloading administrative tasks, reflecting on students' successes and challenges, and facilitating a closer look at the students' personal development.

The COVID-19 pandemic along with the consequential closure of schools required students to work from home using various technologies such as Zoom and virtual learning platforms. This situation afforded parents the opportunity to see some of what their children were doing and to learn vicariously about their school lives. An earlier, pre-COVID AIED research project was called Homework. This involved the use of tablets in school which could be taken home by the child so that they could share and/or redo work from the classroom with their families. The tablets also provided a two-way dialogic medium between the parents and the teacher both in general terms and in relation to particular assignments undertaken by the child [78].

One of the strengths of contemporary AIED has been the development of systems aimed to support teachers (see, for example, [87,88]). For example, dashboard systems help the teacher "orchestrate" what individual students or groups of students do as well as track their progress (or lack of it). The benefits for the teacher are potentially two-fold: (i) the teacher can be assisted in allocating their valuable time to giving one-to-one assistance where it is most needed [89], and (ii) the teacher can be provided with both a synopsis of common difficulties on a topic that might require some whole-class intervention, as well as identifying individual difficulties [87]. A variation on this theme is dashboards that work at the meta-level identifying the students' processes of learning themselves as opposed to their progress in whatever task they are doing. The aim of identifying and displaying this kind of information is to develop the students' capability in terms of self-regulated learning, often referred to as "learning to learn". Self-regulated learning involves setting plausible goals, making plans to achieve those goals, monitoring progress (or lack of it) in reaching the goals and then adjusting the goals and/or the plans as necessary. The idea is to make the students more reflective and more aware of themselves as learners, to develop their learning skills in general and help them achieve transferability of learning skills from one domain to another [90]. Such dashboards have been aimed both at the students themselves as well as at their teachers.

One of the ways in which AI can be used to support a more effective division of labour is for it to engage students, as well as their parents, in the children's "learning to learn" trajectories. So, the parent's question stops being "what did you do at school today?" but rather becomes "what new way of learning stuff that works for you have you tried out this week?". A crucial aspect of this approach is that the student has conversations about learning with peers, with teachers and with their parents. Such conversations help the student think at the meta-level and become better able to self-regulate their learning (see the earlier discussion about the ZPD and the social aspects of learning). Parents can contribute just as well as teachers to their children's progress. So, in addition to being able to rote-learn facts, master complex skills or understand tricky concepts, the student has a sense of how these outcomes can be achieved more effectively.

Another way in which AI could support a new division of labour is by capturing and analysing the students' behavioural patterns that are indicative of self-regulated learning and then transforming them into a form that is both understandable and actionable by parents and students alike. This scenario is an example of a way in which some of the burden, as well as the agency and decision-making related to students' learning, can be more equally shared between the teachers, the students themselves, and their parents. Focusing on the nature of effective learning as opposed to what is being learned, means

that parents can have an equal voice to that of teachers. We all have ways that work for us as learners, and also have our blind spots too. Moreover, discussions between children and their parents on this issue give agency to both parties, as each can legitimately bring their own experiences to the discussion. The role of the dashboards in these discussions is to provide both a way of planning learning by the children, as well as a way of recording the way that learning took place in order to frame the discourse with their parents.

There are reasonable fears about the increasing use of AI in education, mainly centred around potential biases in the modelling and machine learning that underpin their operation [91]. These biases can be eliminated through careful design, evaluation, and deployment (see, for example, [92]). There are also fears about the collection of learner data and its possible misuse, but this is already an issue with non-AI-based educational technologies and will need to be legislated more strictly than at present [93]. Finally, the arrival of Big Tech, which have their own agendas, into the educational ecosystem is potentially worrying (see, for example, [94]). Again, legislation and regulation will be needed. To reflect back on the ways in which an effective partnership between schools and families should be open and transparent [38], we suggest that similar values would also be the basis of a “partnership” between artificial and human intelligence [86]. To allow for that, dialogue (rather than communication) and engagement (rather than involvement) should be implemented between system designers and human stakeholders [95].

4. Concluding Remarks

This review paper’s aim is to bring a non-systematic critical overview of the current state of research and practice around parents’ and carers’ roles in their children’s education. We do that by synthesizing the existing evidence in light of recent global shifts that are challenging the current design principles and opening new opportunities for radical changes in schooling–parents relationships. In this concluding section, we summarize our findings and provide recommendations.

Most western governments and schools today would state that supporting their students’ wellbeing and effective learning are their first priority. Whether or not schools are best designed to support either is debatable, but what is evidentially clear is that actively engaged parents and pulling the learning experience away from being regulated solely within schools into a home–school–community continuum are what would most benefit children. School is just one element in every child’s ZPD, just one form of education out of many, and just one milestone in a life-long journey. Supportive parents, carers, families, and the community surrounding children shape and hold their ZPD way before school starts and are likely to play a significant role long after school ends. If we accept that at least some of our educational system’s aims are to support learners in developing self-regulated skills for learning, we should bring their ZPD “closer to home”. In normative and supportive homes reside those people who understand where the children are coming from, what they have gone through, whether they slept tight at night, and whether they had a nutritious breakfast in the morning. Moreover, the students themselves, with the support of their parents are eventually those who will be making decisions regarding their potential future. Therefore, if schools’ priority is children’s learning, it is essential that children’s ZPD space is integratively built on top of a partnership, and, in that, it would be influenced by those factors that are most personal and relevant to each child.

For this kind of partnership to be effectively supported, and for children’s ZPD to reach its potential, a mutual valuing of parents and school should be established and carefully maintained [10]. To do that, both sides should become knowledgeable and respectful of the other side’s agency and role. Merely “communicating” in the sense of exchanging information is not enough. Parents attending carefully curated school events is not enough. The doors of schools should be opened, the doors of children’s homes should be opened, and the dialogical path to connect them should be paved. This must be done by both sides, based on trust, without dominance from either [10].

There are schools that have established such meaningful partnerships, see for example [4,29,96]. However, those are rarely mainstream schools. Unfortunately, to the best of our knowledge and based on the evidence covered in this review (see for example [30]), the vast majority of mainstream schools, in particular in the UK today, which is the focus of this paper, are at best, investing in “parental involvement” rather than in a partnership. Although teachers’ and school leaders’ perceptions are incredibly important for this change in power dynamics to take place, the solution is not entirely in their hands. Parents should actively seek it. Students should actively seek it. Community leaders should actively seek it. Most of all, policymakers and government representatives should actively seek it.

The clear evidence reviewed and discussed in this article, and in many others (for example, [6,16]) is, for some reason, almost completely ignored by policy makers, which most often cling to the claim that keeping learning almost solely outside of children’s homes is due to the search for equitable education [6]. Our schooling system is blindly based on the notion that standardized assessment and a one-size-fits-all pedagogy—put everyone on a level playing field—is the ultimate cure for the current disturbing achievement gaps. Given the evidence, it is impossible to argue that the current system is even close to being able to provide a level playing field [62,97]. In addition, scholars such as Goodall [52] urge us all to remember that the fact that most of the attainment gaps between students originate from outside of schools, is all the more reason to bring parents into the picture, rather than exclude them.

Policy makers have identified the importance of the parental role in education for many years now. Some US examples are the No Child Left Behind Act of 2001 [98], the forming of national organizations such as the Parent–Teacher Association [99] and the National Coalition for Parental Involvement in Education [100], along with many states’ reforms. UNICEF’s Multiple Indicator Cluster Surveys [101] include a module on parental involvement. However, most policy-based interventions, similarly to most school interventions, are based on the conceptualization of parents’ involvement, and therefore have achieved limited effectiveness. Arizona State has recently enacted a “voucher bill”, allowing all parents to make their own decisions about where their children will attend school [102].

On the other hand, some policies in place are bluntly harmful to the potential of forming parents–school partnerships. For example, the UK government is directing schools to threaten and fine parents for their children’s absences from school [13], and at the time of this paper’s writing, is considering new legislation that is aimed at reducing the autonomy of parents within the context of their children’s education significantly, as well as the autonomy of schools to support parents and learners to exercise this autonomy [103].

Although mainstream state schools are responsible for a great deal of equity and safety practices, they are still, in many ways, a coercive environment, which does not encourage elements that are scientifically proven as central to children’s development and ZPD, such as child-led play, a developed sense of autonomy, natural collaboration, learning by observing, adults modelling (rather than instructing), learning to learn, and learning to identify students’ own emotions and strengths [17]. Moreover, the evidence consistently points to a significant (and growing) number of children who find the school environment to be unhelpful and even harmful, and to the lack of efficiency of governmental policies to address the problem without changing the environment itself [8], such as punitive approaches [13].

Clearly, we realize that opening up the doors of the current mainstream British school system to a diversity of families and cultures could have disastrous consequences. Not only might it dislodge the hinges of those gates and disturb the current running of affairs (which is already extremely vulnerable), but it might also impose a devastating burden on teachers and school leaders, most of whom are already doing the best they can, and are most often overworked, over-stretched and burnt out by the system. Going back to the partnership model, and a dialogic engagement of parents, we argue that we should

think systematically about a new division of labour. This new division of roles should be centred around students' ZPDs. Hence, it should aim at taking the load off teachers, empowering the parents in order to support the resilience of students' ZPD, and as a result creating an ecosystem in which more students can thrive.

Every year, our educational reality becomes more complex. With the job market continuously changing, and the set of skills and professional paths that young people need to consider becoming a moving target, the design of our educational systems cannot be solved anymore by adding more teachers who work harder. Nor would it be solved by having more parents taking their children to be home educated. Artificially keeping learning as an isolated element of children's lives is not sustainable. We argue that a sustainable and accountable partnership model must be based on a wider set of stakeholders, who are relevant to children's ZPD.

For this collaboration to be effective, it needs to be well coordinated and designed. Collaboration research typically examines how the abilities of the various stakeholders in a team differ, and how that difference impacts the collective performance of the team. For instance, one commonly accepted theoretical approach is the "transactive memory" [104]. Wegner [104] showed that teams dividing tasks based on what each member excels at performed better collectively. With AI agents excelling at automating repetitive tasks and identifying patterns, with parents introducing meaningful links between a prescribed curriculum and children's lives, and with teachers as pedagogical experts, the "wicked" educational problem of supporting every child's ZPD might stand a chance. "It does indeed take a village..." and the village members must be on speaking terms.

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