Original article

Examining the Role of Sustainable Leadership in School Effectiveness

Behiye Dağdeviren Ertaş 🆔 *

Department of Educational Sciences, Faculty of Educaiton, Yozgat Bozok University, Yozgat, Türkiye

Abstract

This study aims to determine the relationship between school principals' sustainable leadership behaviors and school effectiveness based on teachers' views. For this purpose, the quantitative method and relational design were used in the study. The study was conducted with 368 teachers working in Yozgat in the 2022-2023 academic year. Data were collected using the Sustainable Leadership Scale and the School Effectiveness Index. The data were analyzed using descriptive statistics, Pearson correlation, and multiple regression analyses According to the study results, teachers view school principals' sustainable leadership behaviors and school effectiveness as high. Environmental and social responsibility received the highest score among the dimensions of sustainable leadership. Analyses revealed that the mean scores for school effectiveness were high according to teachers' views. As a result of the research, it was found that there is a positive relationship between sustainable leadership and its dimensions and school effectiveness. Regression analysis showed that sustainable leadership is an essential factor in school effectiveness. Studies on sustainable leadership in educational organizations are limited in the literature. For this reason, perceptions of sustainable leadership can be examined in the context of educational organizations with an approach that addresses different concepts together.

Keywords: Sustainable leadership, School Effectiveness, Teacher, School Principal.

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* Corresponding author:

Dağdeviren Ertaş Behiye PhD, is assistant professor at Department of Educational Sciences at Yozgat Bozok University, Turkey. Her research interests include organizational behavior and educational administration. She has publications areas of children's rights, leadership, higher education, development of the teaching profession and disadvantaged students.
Email: behiyeertas5884@gmail.com

INTRODUCTION

Political, economic, sociological, and technological factors influence schools in today's world. These factors affect such elements as the quality of instruction, the success of students, the learning of students, and the effectiveness of teachers. After evaluating these conditions, school administrators can make schools an effective and efficient organization by using available resources efficiently. This is why school leaders need adopt a leadership approach leadership rather than traditional management to approach.

Sustainable leadership, which has had an essential place in the leadership literature in recent years, is a leadership approach that attracts the attention of researchers because this approach represents a leadership style that can balance moral, educational, political, administrative, and societal requirements (Shrivastava, 1995). The principles of sustainability leadership respond to the challenges of an increasingly complex world. It extends the definition of leadership to anyone pursuing sustainable change, regardless of role or position. They can make different assumptions about how people work together in creating meaningful change (Sebastian & Hühn, 2024)

Sustainable leadership is an approach that prioritizes issues that classical management theories leave behind, such as diversity, justice, and work/life balance (Lee, 2017). Sustainable leadership combines strategies to ensure that the highest business performance aligns with environmental and societal concerns (McCann & Sweet, 2014). Sustainability is defined as each individual doing their part for the kind of world they want to live in and leave to future generations, and is supported by sustainable leaders (Ferdig, 2007). Sustainable leadership is based on an approach where the organization is considered a natural component of nature. The idea that organizations create sustainable value based on sustainable knowledge that encompasses social, physical, ethical, and commercial reasons is supported (Shrivastava, 1995). Sustainable leadership requires having a long-term perspective when making decisions (Gerard et al., 2017). Hargreaves and Fink (2003) emphasize the importance of teaching sustainability. To understand sustainable living is to understand that people learn to respect and protect the world that is the source of their life. It requires coexistence and living together with other people without harming the natural environment in order to achieve long-term benefits economically and ecologically. Leadership in sustainability is understood to be concerned with the creation of present and future benefits while improving the lives of all the stakeholders involved (Leal Filho et al., 2020).

Although there is limited research on sustainable leadership in educational organizations, some studies have been initiated (Lambert, 2012; Lee & Louis, 2019). However, literature reviews conducted at both the national and international levels have found limited studies that focus on the relationship between sustainable leadership of school administrators and school effectiveness (Sezgin-Nartgün et al., 2020). Therefore, more research is needed to understand and explore the relationship between sustainable leadership and school effectiveness.

School principals must have sustainable leadership qualities to influence the school and society (Lambert, 2012). Principals who demonstrate sustainable leadership qualities are also expected to be able to evaluate events from different perspectives and use human and material resources effectively while managing the school (Hargreaves & Fink, 2003). In this context, it can be thought that school principals who demonstrate sustainable leadership qualities make their schools effective (Sezgin-Nartgün et al., 2020). This can help the school operate more effectively and efficiently. Başaran (2000) states that schools have three purposes: organizational, administrative, and educational. The organizational purpose is related to maintaining schools' existence and functioning. The administrative purpose is to increase the number of educated individuals and improve the quality of education.

Similarly, individuals gaining certain behaviors constitute a part of educational purposes. The effectiveness of schools can be explained by achieving these purposes at the desired level. An effective school does not have more resources than other schools; it just uses the existing resources more efficiently and effectively to improve the results (Helvacı & Aydoğan, 2011). The characteristics of effective schools play a fundamental role in improving ineffective schools (Bickel, 1983).

Global economic and technological changes have created the need for adaptation for the sustainability of schools. Because one of the most important goals of schools is to maintain a level of effectiveness that aligns with environmental expectations, schools need to clearly define their mission and vision, make comparisons with other successful schools, and make plans for continuous improvement. It should be remembered that schools play an essential role, especially in increasing students' academic success. The effectiveness of the school is related to its performance. Effective school research also shows that for a school to be effective, it needs to have a clear vision; a school principal should provide leadership, meet social expectations, and provide a suitable learning environment where students can develop their skills. Therefore, schools that bring these factors together can be effective.

A leading school administrator can harmonize the goals of the school and the unique characteristics of each teacher and each individual in the organization. Successfully progressing in todays and future schools is possible if administrators can turn negativities into opportunities, the ability to follow changes and developments, the ability to include students in decision-making processes, and the ability to develop a vision. Achieving sustainable success in schools is very important in terms of their effectiveness. Therefore, this study was considered to research teachers, who are an essential stakeholder in educational management processes. In this study, the relationship between the sustainable leadership behaviors of school principals and the effectiveness of the school according to the opinions of the teachers is examined. This study provides a new perspective on the literature and has implications for practitioners. Practitioners can contribute to the effectiveness of schools by placing more emphasis on sustainable leadership. In this context, the present research investigates the sustainable leadership

behaviors of school principals and their impact on school effectiveness as perceived by teachers. Within that framework, the following questions were addressed.

1. What are teachers' views on the sustainable leadership behaviors of school principals and school effectiveness?

2. What is the relationship between sustainable leadership and school effectiveness?

LITERATURE REVIEW

Sustainable Leadership

Sustainable leadership is an organizational approach developed from the traditional perspective of shared responsibility, which means preventing the overuse of resources while taking care not to cause economic, social, or environmental harm (Ur Rehman et al., 2024). It is based on seven principles, including, sustainable leadership creates and sustains a culture of lifelong learning, secures long-term success, develops the leadership potential of others, focuses on issues of social justice, enhances rather than consumes human and material resources, improves the diversity and capacity of ecosystems, and emphasizes environmental responsibility (Di Fabio & Peiró, 2018). Sustainable leadership involves leading an organization and its mission toward sustainable development through the adoption and enforcement of socially responsible practices and policies. Sustainable leadership builds on equity and seeks to benefit stakeholders in the present and in the future (Bulmer et al., 2021).

Sustainable leadership differs from traditional leadership in that it emphasizes greater emphasis on long-lasting well-being rather than short-lasting profits. It emphasizes that the leader's role is not only to encourage the production of results and to ensure that those results are continuously produced. To this end, sustainable leadership increasingly emphasizes protecting and developing human resources, suggesting a more humanistic approach to management. It is an approach that encourages leaders to address issues that the traditional approach deems less critical, such as variety, fairness, and work-life balance (Lee, 2017). Sustainable leadership involves behaviors, practices, and systems that create lasting value for all stakeholders of organizations, including the environment, future generations, and society (Peterlin et al., 2015). Therefore, the consciousness and continuity mindset of sustainable leadership are the main drivers of sustainable leadership (Tideman et al., 2013). Sustainable leadership enables individuals to adapt and flourish in increasingly complex work and other environments by enhancing organizational diversity and fostering human capital development. To achieve this, leaders must establish sustainable relationships with all of their stakeholders, both within and outside of the organization (Hargreaves & Fink, 2006).

Sustainable leaders pay attention to the importance of their organizations' financial and structural capital, but they value human development and the environment. They also empower the organization's capabilities to tackle social and environmental challenges, create organizational value, and take

responsibility for the development of the organization to which they belong (Armani et al., 2020). Egri and Herman (2000) claim that sustainable leaders should harmonize their values with the organization's values so that decisions should be based on strategies that balance the values and principles of sustainability with the traditional values and principles of the organization. In the educational environment, sustainable leaders value organizational diversity, which fosters the productivity of good ideas and successful practices in a shared community of learning and development (Grooms & Reid-Martinez, 2011). Sustainable educational leadership is developing an educational environment where shared learning and development are valued, encouraging effective practices (Bulmer et al., 2021). Sustainable leadership is essential; it spreads to other organization members and becomes an ongoing process. This is a responsibility embraced by all organization members, not to unnecessarily waste human or financial resources and not harm the surrounding educational and community environment (Grooms & Reid-Martinez, 2011). The school principal must be proactive in ensuring sustainable leadership that provides continuous instructional leadership within the school to ensure continuous improvement (Hardie, 2015). Schools led by sustainable leaders strongly emphasize fostering innovation as a core aspect of their mission, ensuring that new ideas and creative approaches are continually encouraged and integrated into their practices. Schools are structured as organizations that learn quickly and deeply and adapt to innovation. The movement for change is always forward and for the better (Hargreaves, 2007).

School Effectiveness

The foundations of research on effective schools are based on Coleman et al. (1966) "Report on Equal Opportunities in Education" (Coleman et al., 1966). The initial definition of effective schools is based on equality between children from different socioeconomic classes. While educators first emphasized equality for lower socioeconomic levels, later factors such as gender, ethnicity, disability, and family structure began to be addressed. (Lezotte, 2001). After Coleman reported on effective schools, Edmonds (1979) brought a different perspective and emphasized factors related to school and education rather than socioeconomic inequality. He determined the characteristics of effective schools as an emphasis on instructional leadership, a school climate based on high expectations, a disciplined environment, priority given to students' acquisition of basic skills, careful use of school resources, and continuous monitoring of student development. The Effective School Movement responds to the proposition that society expects schools to teach basic skills to all students. It demands that schools effectively provide all students with the basic skills they need to become sustainable members of society (Mace-Matluck, 1987). The practical school approach is based on the belief that every student can learn and every teacher can Thus, it is accepted that effective schools will make a difference in students' learning (Balcı, 1988).

An effective school is where students' cognitive, emotional, psychomotor, social, and aesthetic developments are supported under the most appropriate conditions and provided with the most effective learning environment (Özdemir, 2000). The Effective Schools Process is a proven school change process in which all students progress and are prepared to move on to the next grade level (Taylor, 2002). One of the main goals of a school is for individuals to realize their inner potential and adapt to society. An effective school system focuses on encouraging the personal development of individuals and includes a series of activities to raise them as valuable individuals for society (Ada & Akan, 2007). An effective school does not have more resources than other schools; it simply uses the existing resources more efficiently and effectively to improve results (Helvacı & Aydoğan, 2011). The characteristics of effective schools play a fundamental role in improving ineffective schools (Bickel, 1983). The significant difference in the performance of two schools with similar goals prompted an investigation into the reasons behind this discrepancy. Thus, studies of school effectiveness and the factors that play a role in both success and failure in educational institutions have been discussed in the literature (Arslan et al., 2007). Although various dimensions of effective schools are mentioned in the literature, the studies have not created a list of common characteristics of effective schools. However, the points that the studies emphasize the most are determined as leadership, the goals and mission of the school, expectations for students, effective use of time, appropriate school program, academic success, teaching-learning process, communication, integration, harmony, cooperation, satisfaction, morale, innovation, change, development, autonomy, flexibility, culture, order and discipline, participation in decision-making and taking responsibility, school climate, measurement and evaluation, environmental-social support, family participation and integration (Şişman & Turan, 2004).

The fundamental feature distinguishing an effective school from others is its educational goals and functions. An effective school's internal characteristics, organizational structures, and effectiveness dimensions differ from other institutions. One of the fundamental aspects of the effectiveness of such a school includes maintaining an efficient teaching and learning process and environment (Baştepe, 2009). The role of school administrators is of great importance in an effective school. In other words, one of the most fundamental steps that must be taken to achieve an effective school is for school administrators to use their leadership skills. It is an important fact that many researchers agree on when creating, managing, and maintaining an effective school. As a school administrator, the learning leader must create a vision that clearly and explicitly expresses the school's goals and education policy and must be able to share this vision with all employees in the school (Çubukçu & Girmen, 2006).

MATERIALS and METHODS

This study determined the relationships between sustainable leadership and school effectiveness in primary and secondary schools. This study used the relational screening model to focus on the relationships between variables. Relational screening studies aim to determine the existence of a relationship between two or more variables and the direction of this relationship (Büyüköztürk et al., 2018).

Participants

The study universe consists of 3501 teachers working in Yozgat province in the 2022-2023 academic year. The sample calculated at a confidence interval of 95% is sufficient to consist of 347 teachers. The scales were delivered to 400 teachers, and 368 valid scales were obtained. The selection of teachers was carried out by stratified sampling method.

Table 1. Demographic Distribution of the Sample

Variable		Frequency	%
Gender	Female	195	53
	Male	173	47
Experience	1-10 years	118	32
	11-20 years	147	39
	21 and over	103	28
Level of education	Graduate	297	81
	Postgraduate	71	19

Three hundred sixty-eight school teachers working in Yozgat province in the 2022-2023 academic year participated in the research. One hundred ninety-five participants were female (53%), the other 179 were male (47%). One hundred eighteen of the participants (32%) had taught for 1-10 years, 147 for 11-20 years (39%), and 103 for 21 years or more (28%). Two hundred ninety-seven teachers (81%) had a bachelor's degree, while 71 (19%) had a postgraduate degree.

Data Collection Tools

In this study, the Sustainable Leadership Scale developed by Dağdeviren-Ertaş and Özdemir (2021) and the School Effectiveness Index developed by Hoy (2009) and adapted to Turkish by Demirkasımoğlu and Taşkın (2015) were used.

Sustainable Leadership Scale

The sustainable leadership scale (SLS) includes four dimensions and 26 items. The dimensions of SLS are human resource development, strategic deployment, deep learning, and environmental-social responsibility. SLS is a 5-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree"

(5). In the current study, the reliability of the dimensions of SLS was calculated with Cronbach's alpha coefficient and the following values were obtained: .90 for "human resource development," .94 for "strategic deployment," .95 for "deep learning," and .93 for "environmental-social responsibility." The current study conducted CFA on the data file consisting of 368 teacher participants. The results are as follows; [$\chi2$ = 961.25; sd = 293; $\chi2$/sd = 3.28; RMSEA = .07; CFI = .92; TLI = .92; SRMR: .04]. CFA results are within the accepted reference value ranges of Tabachnick and Fidell (2007). It was decided that SLS is a valid data collection tool for this research.

School Effectiveness Index

The school effectiveness index (SEI) consists of a single dimension and eight items. SEI is a 5-point Likert-type scale ranging from "never" to "always ."In the current research, the reliability of SEI was calculated using the Cronbach alpha coefficient, and .87 was obtained. Accordingly, it was concluded that SEI is also reliable for this research. In the current research, CFA was performed on the data file of 368 teacher participants. The results are as follows; [$\chi2$ = 61.84; sd = 20; $\chi2$/sd = 3.09; RMSEA = .07; CFI = .96; TLI = .94; SRMR: .03]. CFA results are within the accepted reference value ranges of Tabachnick and Fidell (2007). It was decided that SEI is a valid data collection tool for this research.

Procedures and Data Analysis

The scales in the research were applied to teachers working in Yozgat province in the 2022-2023 academic year. Teachers filled out the scales voluntarily. Filling out the scales took approximately 10 minutes for each participant. The scales were distributed to 400 teachers, and 368 returned scales were used appropriately for data analysis. Data analysis was carried out using SPSS 27 and Mplus programs. Before starting the analyses, it was evaluated whether there were outliers and missing data in the data set. As a result of the checks, it was determined that there were no outliers or missing data. In order to evaluate the assumptions of multivariate statistical analysis in the data set, skewness and kurtosis coefficients based on the sub-dimensions of both scales were examined. The skewness coefficients for the dimensions of both scales were between -0.803 and -0.430, and the kurtosis coefficients were between -0.604 and 0.314. These values indicate that the data set was normally distributed (Tabachnick & Fidell, 2007). In addition, the variance magnification factor and tolerance values were examined to determine the presence of multicollinearity for the SLS and SEI, and it was determined that there was no multicollinearity problem (Tabachnick & Fidell, 2007).

FINDINGS

The current study first analyzed the participants' views on the two variables, the statistical significance of the relationships between the subdimensions of sustainable leadership and school

effectiveness, and the descriptive statistics, focusing on the relationship between sustainable leadership and school effectiveness. The results are shown in Table 2

Table 2. Descriptive statistics regarding the sub-dimensions of SLS and school effectiveness

Variables	$\bar{X}$	Sd.	1	2	3	4	5
Human Resources Development	3.79	.804	-				
Strategic Distribution	3.72	.870	.763**				
Deep Learning	3.74	.820	.738**	.816**			
Environmental Social Responsibility	3.99	.738	.610**	.663**	.759**		
School Effectiveness	3.67	.472	.544**	.572**	.633**	.633**	-

*$p < .01$

As seen in Table 2, according to teachers' views, sustainable leadership perceptions were between 3.99 and 3.72 in all dimensions of SLS. According to these findings, according to teachers' views, school principals' sustainable leadership is at a high level. As shown in Table 1, the average score teachers gave to school effectiveness is 3.67, which is high. On the other hand, the relationships between school effectiveness and the sub-dimensions of sustainable leadership are statistically significant and positive. The strongest relationship between school effectiveness and the dimensions of sustainable leadership was determined as "deep learning" and "environmental, social responsibility" ($r = .63$; $p<.05$). This result shows that deep learning, environmental and social responsibility, and school effectiveness are moderately and significantly related to the participants' opinions. Multiple regression analysis was conducted to determine the level at which the four sub-dimensions of SLS explain school effectiveness, and the analysis results are presented in Table 3.

Table 3. Regression analysis results on sustainable leadership and school effectiveness

Dependent Variable: School Effectiveness					
Independent Variable	β	S.E	β (βeta)	t	p
Sabit	1.910	.105		18.162	.000
Human Resources Development	.063	.037	.108	1.721	.086
Strategic Distribution	.038	.040	.070	.956	.340
Deep Learning	.137	.040	.238	3.005	.003
Environmental Social Responsibility	.217	.038	.340	5.698	.000
R: .681 *R^2*: .45					
F(4-363)= 7.698; *p*=.000					

*$p < .05$

As seen in Table 3, it is identified the four sub-dimensions of sustainable leadership as significant predictors of school effectiveness. They explain 45% of the variance in "school effectiveness" (F=7.698; p< .05). However, the environmental social responsibility sub-dimension of sustainable leadership (β = .340, t =5.698; p<.05) has the most significant effect on the variability in "school effectiveness ."In addition, the deep learning sub-dimension of sustainable leadership (β = .238, t =3.005; p<.05) has the second most significant effect on the variability in "school effectiveness ."It was determined that the strategic distribution and human resource development sub-dimensions were not significant predictors of the effect of sustainable leadership on school effectiveness (p>.05).

RESULTS and DISCUSSION

This research determined the first research question, the level of teachers' perceptions of sustainable leadership and school effectiveness. According to teachers' perceptions, principals' sustainable leadership is at a high level. The highest mean scores were found in the dimension of environmental-social responsibility. Gummerson (2015) emphasizes that supporting their work with a morally conscious goal is essential for sustainable leaders. Therefore, sustainable leaders are environmentally sensitive and environmentally committed. Thus, the answers given by the participants to the dimension of environmental and social responsibility are an essential situation for sustainable leadership. Previous studies have also shown that sustainable leadership strengthens the organizational leaders' internal resources to solve social and environmental challenges without consuming existing resources, to produce value for the organization, and to be responsible for the development of the organization to which they belong (Armani et al., 2020). The main objective of sustainable leadership is to guide the organization and its employees through adopting and implementing social responsibility-oriented activities and strategies for promoting and realizing sustainable development. The main objective of sustainable leadership is to guide the organization and its employees through adopting and implementing social responsibility-oriented activities and strategies for promoting and realizing sustainable development (Bulmer et al., 2021).

Teachers' perceptions of school effectiveness are high. Teachers evaluate their schools as effective schools. This result shows that teachers think that their schools have a high, if not complete, success in achieving educational goals, successfully educating students in all aspects, and using resources most effectively. In the literature review examined, the results of Cerit and Yıldırım (2017), Abdurrezzak and Uğurlu (2016), Demir (2023), Görgülü and Kazak (2022); Sezgin-Nartgün et al. (2020), who examined school effectiveness in line with teachers' opinions, are also consistent with the results of this research. Küçük (2020) found teachers' perceptions of school effectiveness at a moderate level; Polatcan and Cansoy (2018) found school effectiveness levels to be moderate and above moderate in their studies on effective school research. As a result of the research conducted by Dalbudak and Özgenel (2022), it was found that teachers of successful schools perceive their schools as more effective

than teachers of low-achieving schools. School effectiveness studies reveal a significant number of characteristics of effective schools. These factors can be found at the classroom, school, and context levels (Creemers & Reezigt, 1996). Schools are expected to perform different explicit or implicit school functions at different levels in an era of globalization, competition and transformation. Accordingly, conceptualizing school effectiveness should be multifaceted, encompassing technological, economic, social, political, cultural and learning effectiveness at individual, institutional, community/society and international levels (Cheng, 2022).

A positive relationship between sustainable leadership and school effectiveness was found in the research. The following studies in the literature review found a positive relationship between sustainable leadership and school effectiveness (Sezgin-Nartgün et al., 2020). In addition, Cerit and Yıldırım (2017) found a positive and significant relationship between the levels of practical leadership qualities and school effectiveness. Çevrik and Koçak (2022) found moderate positive and significant relationship between charismatic leadership and school effectiveness. The research of Uçak and Bilgivar (2023) found that the visionary leadership characteristics of school principals were positively related to school effectiveness. The results obtained from leadership and school effectiveness research show that the leadership behaviors of school principals are essential in determining the effectiveness of schools.

Finally, the predictive value of sustainable leadership on school effectiveness was determined. It was found that sustainable leadership significantly predicted school effectiveness. It was determined that the dimensions explaining school effectiveness from the sustainable leadership sub-dimensions were deep learning and environmental social responsibility. These dimensions were determined as significant predictors of school effectiveness. According to Hargreaves and Fink (2003), the main point that should be emphasized in education is deep learning and teaching practice that continues natural processes and continues throughout life. The basis of sustainable education is the adoption of a deep learning approach and the promotion of teaching and learning strategies that support lifelong learning. Therefore, participants' responses to their deep learning levels are critical to sustainable leadership. Based on these results, the importance of school principals to deep learning in providing quality education to students affects the extent to which teachers see their schools as effective. In addition, it is considered essential to support effective school characteristics related to environmental and social responsibility. In fact, based on scientific research, sustainable leadership includes ethics, socially responsible and responsible business, values alignment with stakeholders, and organizational responsibility. In order to develop organizational competencies that can help create better value for stakeholders, a sustainable leadership strategy should be developed (Dalati et al., 2017).

Recommendations

As this survey has been designed with the views of teachers working in Yozgat province, we recommend conducting similar surveys in other cities. This study was conducted as a cross-sectional

study; researchers are recommended to conduct longitudinal studies in the future. Only teachers working in public schools were included in this study. From the perspective of private school teachers, research can investigate the sustainable leadership of principals and school effectiveness. There is a need for more studies to be conducted in the literature on sustainable leadership and school effectiveness.

For this reason, educational researchers can determine the reflection of different variables on sustainable leadership by bringing them together. The links between the concepts in question can be determined, and the power of influence of these concepts can be the subject of investigation. In addition, the analyses in this study were conducted at a single level. Since this study is leadership research, it is recommended that a multi-level study be conducted by addressing the school and teacher levels. Findings will help understand how sustainable leadership relates to effective schools.

Conclusions

Finally, the study examined the predictive power of sustainable leadership on the effectiveness of schools. It was found that sustainable leadership is a significant predictor of the effectiveness of a school. Deep learning and environmental social responsibility were determined to be the most important sustainable leadership sub-dimensions in explaining school effectiveness. Both dimensions emerged as significant predictors of school effectiveness.

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