04. Eco-Metadiscourse in Constructing Ecological Awareness in Children's Nature-Themed Educational Videos[1]

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Abstract

This study investigates the use of metadiscourse in children's nature-themed educational videos, introducing the concept of *eco-metadiscourse* as a new analytical perspective. Eco-metadiscourse brings together the analytical framework of metadiscourse, grounded in this study in Hyland's (2005) Interpersonal Model, and an ecolinguistic approach (Stibbe, 2015), offering a framework that addresses both the role of discourse in structuring information and interaction and its role in conveying ecological values, responsibilities, and worldviews. The dataset comprises four educational videos produced by the TEMA Foundation, totalling approximately 15 minutes of audiovisual material. The study adopts a qualitative approach, analyzing interactive resources such as transitions, frame markers, evidentials, endophoric markers, and code glosses, as well as interactional resources including hedges, boosters, attitude markers, self-mentions, and engagement markers. The findings indicate that metadiscourse resources perform a multidimensional function in the construction of ecological awareness, presenting ecosystems as dynamic networks grounded in interdependence, cyclicity, and diversity. In this respect, interactive resources contribute to the logical and conceptual structuring of ecological processes, while interactional resources support ethical evaluation, a sense of responsibility, and the development of participatory awareness. At the level of subcategories, transitions, frame markers, and endophoric markers organize ecological processes step by step and guide the flow of discourse; evidentials and code glosses define and exemplify concepts, providing credible, accessible, and concrete explanations; hedges and boosters introduce both caution and emphasis, establishing a balance between possibility and certainty; and attitude markers, self-mentions, and engagement markers strengthen evaluative and ethical guidance, narrator mediation, and audience interaction, contributing to the development of responsibility, care, and participatory ecological awareness among children. The study shows that even in a limited corpus, eco-metadiscourse plays a central role in shaping children's ecological knowledge and ethical orientations. The findings also highlight the pedagogical potential of eco-metadiscourse and point to its relevance across a range of educational and public genres, including textbooks, environmental

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campaigns, educational media, and children's literature. Overall, the study positions eco-metadiscourse as an explanatory analytical framework for examining how ecological awareness, responsibility, and caring orientations are constructed through language.

Keywords: Eco-metadiscourse, children's educational discourse, ecological awareness, metadiscourse markers, ecolinguistics

Çocuklara Yönelik Doğa Temalı Eğitim Videolarında Çevre-Üstsöyleminin Çevre Bilimsel Farkındalık İnşası[3]

Öz

Bu çalışma, çocuklara yönelik doğa temalı eğitim videolarında üstsöylem kullanımını inceleyerek çevre-üstsöylem (ing. eco-metadiscourse) kavramını yeni bir çözümsel bakış açısı olarak ortaya koymaktadır. Çevre-üstsöylem, bu çalışmada Hyland'ın (2005) Kişilerarası Üstsöylem Modeli temelinde ele alınan üstsöylemin çözümsel çerçevesi ile Stibbe'nin (2015) çevre dilbilimsel yaklaşımını bir araya getirerek, söylemin hem bilgi ve etkileşimi yapılandırmadaki işlevini hem de çevre bilimsel değerleri, sorumlulukları ve bakış açılarını aktarmadaki rolünü birlikte ele alan bir çerçeve sunmaktadır. Çalışmanın veri seti, TEMA Vakfı tarafından üretilmiş toplamda yaklaşık 15 dakikalık görsel-işitsel materyali kapsayan dört eğitim videosundan oluşmaktadır. Nitel bir yaklaşım benimsenen çalışmada; mantıksal bağlayıcılar, çerçeve belirleyiciler, tanıtlayıcılar, metin içi belirleyiciler ve açımlayıcılar gibi bilgi odaklı etkileşimli üstsöylem belirleyicilerinin yanı sıra kaçınmalar, vurgulayıcılar, tutum belirleyicileri, kendinden söz etme ve katılım belirleyicileri gibi alıcı odaklı etkileşimli üstsöylem belirleyicileri çözümlenmiştir. Bulgular, üstsöylem araçlarının çevre bilimsel farkındalığın inşasında çok boyutlu bir işlev üstlendiğini ve ekosistemleri karşılıklı bağımlılık, döngüsellik ve çeşitlilik temelinde dinamik ağlar olarak sunduğunu göstermektedir. Bu bağlamda, bilgi odaklı etkileşimli üstsöylem belirleyicileri çevre bilimsel süreçlerin mantıksal ve kavramsal olarak yapılandırılmasına katkı sağlarken, alıcı odaklı etkileşimli üstsöylem belirleyicileri etik değerlendirmeyi, sorumluluk duygusunu ve katılımcı bilinç gelişimini desteklemektedir. Alt ulamlar düzeyinde bakıldığında, mantıksal bağlayıcılar, çerçeve belirleyiciler ve metin içi belirleyiciler çevre bilimsel süreçleri adım adım düzenleyerek söylem akışını yönlendirmekte; tanıtlayıcılar ve açımlayıcılar kavramları tanımlayıp örneklendirerek güvenilir, erişilebilir ve somut açıklamalar sunmakta; kaçınmalar ve vurgulayıcılar temkin ile vurgu arasında bir denge kurarak olasılık ile kesinliği birlikte yansıtmakta; tutum belirleyicileri, kendinden söz etme ve katılım belirleyicileri ise değerlendirmeci ve etik yönlendirmeyi, anlatıcı aracılığını ve izleyiciyle etkileşimi güçlendirerek çocuklarda sorumluluk, özenli tutum ve katılımcı çevre bilimsel farkındalığın gelişimini desteklemektedir. Çalışma, sınırlı bir derlemde dahi çevre-üstsöylemin çocukların çevre bilimsel bilgilerini ve etik yönelimlerini biçimlendirmede merkezi bir rol oynadığını ortaya

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koymaktadır. Bulgular ayrıca, çevre-üstsöylemin pedagojik potansiyeline dikkat çekmekte ve ders kitapları, çevre kampanyaları, eğitsel medya ve çocuk edebiyatı gibi farklı eğitimsel ve kamusal türlerdeki kullanımına işaret etmektedir. Genel olarak bu çalışma, çevre-üstsöylemi ekolojik farkındalık, sorumluluk ve özenli yönelimlerin dil yoluyla nasıl inşa edildiğini incelemek için açıklayıcı bir çözümsel çerçeve olarak konumlandırmaktadır.

Anahtar kelimeler: çevre-üstsöylem, çocuk eğitim videoları, çevre bilimsel farkındalık, üstsöylem belirleyicileri, çevre dilbilim

1. Introduction

The growing global environmental crisis has brought ecological awareness to the centre of political, social, and educational agendas worldwide (Harrison, 2023; Stibbe, 2015). Recent studies suggest that responding to environmental problems requires more than technological innovation or policy reform alone; it also calls for changes in how these issues are articulated and understood in discourse (Ashraf et al., 2025; Naureen & Janjua, 2024). Language plays an important role in this respect, as it shapes interpretations of ecological problems, frames responsibility, and influences how future actions are imagined. Accordingly, linguistic choices cannot be seen as neutral but function as meaningful resources in the construction of ecological awareness (Goswami & Singh, 2025; Inoue, 2023).

Within linguistics, the growing interest in ecolinguistics, ecostylistics, and ecotranslation reflects an increasing awareness of the role language plays in discussions of sustainability (Cheng, 2022; Li, 2021). Research in these areas shows that discourse can either support exploitative views of nature or contribute to more sustainable ways of thinking and acting. However, much of this research has concentrated on adult-oriented genres, such as journalistic texts, non-governmental organization reports, environmental advocacy materials, and policy documents (Ashraf et al., 2025; Novawan et al., 2022; Stibbe, 2015). In this regard, children's educational videos have received far less attention, even though they play an important role in shaping values, behaviours, and ecological responsibility from an early age (McKnight, 2010; Sotuku et al., 2016; Rijal, 2025).

Children's nature-themed educational videos bring together entertainment and moral instruction. Through stories and explanations, they address ecological issues such as pollution, deforestation, and species extinction, while also communicating clear messages about responsibility and care for the environment (Bufalino & D'Aprile, 2024; Yujuan, 2021). To this end, these videos use various rhetorical and stylistic resources to frame ecological knowledge, draw attention to environmental risks, and position the child viewer as an active participant in environmental protection (Pratt & Fiese, 2004; Greenhalgh-Spencer, 2019; Haraway, 2019). Within this process, metadiscourse markers are particularly important, as they guide comprehension, support ethical understanding, and encourage participatory engagement (Hyland, 2005; Salager-Meyer, 1994). To clarify how such guiding functions are realized linguistically, it is first necessary to outline what is meant by metadiscourse and how it has been conceptualized in linguistics.

Metadiscourse can be defined as the linguistic resources writers use to organise their texts and to signal their relationship with readers (Hyland, 2000). Through metadiscourse, writers not only present information but also guide readers through the text, indicate how ideas should be interpreted, and position themselves in relation to what is being said. In this respect, metadiscourse helps create coherent and reader-oriented texts by facilitating interaction between the writer and the audience.

A variety of metadiscourse taxonomies have been proposed in the literature (e.g. Ädel, 2006, 2010; Bunton, 1999; Dahl, 2004; Crismore et al., 1993; Dafouz-Milne, 2003; Hyland, 1998, 2005; Mauranen, 1993; Meyer, 1975; Vande Kopple, 1985, 1997; Williams, 1982). While these models differ in their theoretical focus and scope, Hyland's (2005) taxonomy has been widely used in discourse studies, largely because it brings together earlier classifications and provides a clear and systematic analytical framework.

The model proposed by Hyland (2005) consists of two main categories: interactive and interactional metadiscourse. Each of these two categories comprises five subtypes of metadiscourse markers. Table 1 presents these subcategories with their explanations and illustrative examples.

Table 1: Hyland's Interpersonal Model of Metadiscourse (Hyland, 2005, p. 49)

Category	**Function**	**Resources**
Interactive	**Help to guide the reader through the text**	
Transitions	Express semantic relation between main clauses	And, in addition, but, consequently
Frame markers	Refer to discourse acts, sequences, or text stages	Finally, to conclude, my purpose is
Endophoric markers	Refer to information in other parts of the text	Noted above, see Fig.,in Section 2
Evidentials	Refer to source of information from other texts	According to X, (Y, 1990), Z states
Code-glosses	Help readers grasp the meanings of ideational material	Namely, e.g., such as, in other words
Interactional	**Involve the reader in the text**	
Hedges	Withhold the writer's full commitment to the proposition	Might, perhaps, possible, about
Boosters	Emphasize force or writer's certainty in proposition in fact / definitely / it is clear that	In fact, definitely, it is clear that
Attitude Markers	Express writer's attitude to pro-position	Unfortunately, I agree, surprisingly
Engagement Markers	Explicitly refer to or build a relationship with the reader	Consider, note that, you can see that
Self-Mentions	Explicit reference to author(s)	I, we, my, our

As illustrated in Table 1, interactive metadiscourse markers such as transitions, frame markers, endophoric markers, evidentials, and code glosses support writer–reader interaction by helping readers follow the logical progression of ideas and by supplying support for claims. On the other hand, interactional metadiscourse markers, including hedges, boosters, attitude markers, engagement markers, and self-mentions, allow writers to express stance, involve readers in the discourse, and adjust the level of commitment to their claims.

Although metadiscourse markers have been extensively studied in academic, political, educational, and media discourse across national and international scholarship (Hyland, 2005; Beyazyildirim & Ercan, 2023; Hürcan & Duruk, 2025; Güçlü, 2025b; Ädel, 2010; Dafouz-Milne, 2003; Novawan et al., 2022; Soyşekerci et al., 2022), their role in ecological contexts remains underexplored. With regard to ecolinguistic research, existing studies have largely concentrated on narratives, metaphors, and framing

devices in media, educational, and activist discourse (Ashraf et al., 2025; Novawan et al., 2022; Li, 2021; Cheng, 2022).

Research focusing on children within ecolinguistics has examined ecological vocabulary, environmental framing, and representations of animals and nature in genres such as nursery rhymes, folk songs, and children's literary narratives (Abdullah, 2022; Fashal & Al Shamari, 2022; Shakeel & Arslan, 2023; Sudarto & Khotimah, 2024; Ahmad, 2025). However, these studies have primarily addressed lexical, narrative, or representational dimensions of ecological meaning. As a result, the systematic investigation of metadiscourse in child-directed, nature-themed educational videos, particularly with regard to how discourse organizes ecological information, guides interpretation, and supports ethical and participatory orientations within a multimodal learning environment, has not yet been undertaken. This study addresses this gap through an analysis of Turkish nature-themed educational videos produced by the TEMA Foundation. It introduces the concept of *eco-metadiscourse* as an analytical perspective that integrates insights from metadiscourse studies (Hyland, 2005) and ecolinguistics (Stibbe, 2015), and applies this framework to child-directed nature-themed educational videos to examine how ecological meaning is discursively constructed.

Accordingly, this study aims to investigate how metadiscourse categories, as defined by Hyland (2005), are employed in children's nature-themed educational videos to construct ecological awareness, while drawing on Stibbe's (2015) ecolinguistic perspective to examine how these categories guide ethical understanding and participatory engagement among young audiences. Guided by this aim, the study addresses the following research questions:

1. What are the types and linguistic realizations of interactional metadiscourse categories in children's nature-themed educational videos?

2. How are these metadiscourse categories used to construct ecological awareness and guide ethical understanding among young audiences?

2. Methodology

2.1. Corpus and Data Collection

The corpus of this study consists of four nature-themed educational videos produced by the TEMA Foundation (*Türkiye Erozyonla Mücadele, Ağaçlandırma ve Doğal Varlıkları Koruma Vakfı*; The Turkish Foundation for Combating Soil Erosion, Reforestation and the Protection of Natural Habitats). These videos are published on the *Minik TEMA* (Little TEMA, preschool) and *Yavru TEMA* (Young TEMA, primary school) educational portals (https://www.minik-yavrutema.org/).

The titles of the videos are *Yaşam Çeşit Çeşit* (Life is Diverse, 4:15 minutes), *Toprak Dersem Çık* (When I Say Soil, Come Out, 3:55 minutes), *Ormandaki Yaşam* (Life in the Forest, 3:36 minutes), and *Doğada Gözlem* (Observation in Nature, 3:40 minutes). The four videos amount to approximately 15 minutes and 26 seconds of audiovisual material.

The spoken discourse was transcribed word-for-word from the original Turkish audio, yielding a corpus of 1,573 words. The transcriptions were checked for linguistic accuracy and consistency with the original context. Each transcript was segmented into units at the sentence or clause level in order to facilitate systematic analysis. Although relatively small in size, this corpus is methodologically sufficient for

qualitative discourse analysis. The videos are institutionally produced materials designed by the TEMA Foundation, which ensures authenticity and pedagogical relevance. They explicitly address ecological themes such as biodiversity, soil and forest protection and nature observation.

2.2. Data Analysis

The analysis was carried out in two consecutive phases. In the first phase, the transcripts were examined in detail and instances of metadiscourse were identified according to Hyland's (2005) Interpersonal Model. This involved coding for interactive resources, such as transitions, frame markers, code-glosses, evidentials, and endophoric markers, as well as interactional resources such as hedges, boosters, attitude markers, engagement markers, and self-mentions. Each occurrence was systematically recorded and categorized within this framework. In the second phase, the identified markers were analyzed within their ecological context, focusing on how metadiscourse interacted with ecological vocabulary such as forest, soil, diversity, and nature.

To support this two-level analysis, the study adopts an integrated analytical framework that brings together Hyland's (2005) Interpersonal Model of Metadiscourse and Stibbe's (2015) ecolinguistic approach. While Hyland's framework provides a systematic basis for identifying and classifying metadiscourse in the video texts, Stibbe's ecolinguistic perspective informs the interpretation of how these patterns shape representations of nature and ecological relations.

3. Findings and Discussion

This section presents and discusses the findings of the study in relation to the two research questions. First, it identifies the metadiscourse categories and their linguistic realizations employed in children's nature-themed educational videos. Second, it examines how these categories function in the construction of ecological awareness and in guiding ethical understanding among young audiences. The discussion begins with interactive metadiscourse categories, then moves on to interactional categories, and concludes with an overall discussion that integrates the findings across categories.

3.1. Interactive Metadiscourse Categories

3.1.1. Transition

Transitions are interactive metadiscourse markers that signal logical relations between ideas, sentences, or discourse segments (Hyland, 2005). The analysis shows that transitions play a crucial role in guiding young viewers through ecological concepts in children's nature-themed educational videos, as they make connections between ideas explicit and easy to follow. In these videos, transitions support children's comprehension by marking relations such as addition, contrast, cause–effect, and condition. The examples below illustrate the transitions identified in the data.

(1) *Bir ormanda ne kadar çok farklı tür yaşıyorsa o orman daha güçlüdür,* ***çünkü*** *her tür ekosisteme katkıda bulunur*. (Yaşam Çeşit Çeşit; Life is Diverse) "A forest is stronger the more species it has, **because** each species contributes to the ecosystem."

(2) *Yağmur toprağın derinliklerine süzülür,* ***bu yüzden*** *yeraltı suları oluşur*. (Toprak Dersem Çık!; If I Say Soil, Come Out!) "Rain seeps into the soil, **therefore** underground water forms."

(3) *Ağaçlar kocaman gövdeleriyle hareketsiz görünür, **ama** aslında birbirleriyle iletişim kurarlar.* (Ormandaki Yaşam; Life in the Forest) "Trees look immobile with their trunks, **but** in fact they communicate with one another."

(4) *Ölü ağaçlar çürüdüğünde toprağa karışır, **böylece** yeni yaşam alanları oluşur.* (Ormandaki Yaşam; Life in the Forest) "When dead trees decay, they mix into the soil, **thus** creating new habitats."

(5) *Onları ürkütmemek için uzaktan izlemeliyiz, **aksi halde** doğal yaşamlarına zarar veririz.* (Doğada Gözlem; Observation in Nature) "We should observe them from a distance, **otherwise** we may harm their natural lives."

(6) *Bazı canlılar serin ve yağışlı ormanlarda, bazıları ise sıcak ve kurak bozkırlarda yaşar; **aynı zamanda** farklı bölgelerde farklı türler bulunur.* (Yaşam Çeşit Çeşit; Life is Diverse) "Some creatures live in cool, rainy forests, others in hot, dry steppes; **in addition**, different species are found in different regions."

(7) *Toprakta birçok canlı yaşar **ve** hepsi toprağın verimliliğini artırır.* (Toprak Dersem Çık!; If I Say Soil, Come Out!) "Many creatures live in the soil **and** all of them increase its fertility."

(8) *Doğayı dinleyin, izleyin **ve** keşfedin.* (Doğada Gözlem; Observation in Nature) "Listen to nature, watch it **and** explore."

The examples show that transitions play a key role in explaining ecological interconnections to children. Causal and consequential transitions, as seen in Examples (1), (2), and (4), help present natural processes as logically connected. Markers such as *çünkü* "because", *bu yüzden* "therefore", and *böylece* "thus" highlight interdependence by showing that species strengthen ecosystems through mutual contribution, that rainfall sustains underground water, and that decay leads to new habitats. From an ecolinguistic perspective, these links foreground nature as a relational system in which each element supports the continuity of the whole.

Contrastive transitions are illustrated in Example (3) through the use of *ama* "but". This marker contrasts appearance with reality, presenting trees not as passive elements but as beings capable of communication. By challenging the view of nature as silent and inactive, the transition encourages a rethinking of forests as active and responsive ecological spaces.

Conditional transitions, as observed in Example (5), introduce responsibility by linking human behaviour directly to ecological outcomes. The marker *aksi halde* "otherwise" highlights potential harm as the consequence of inappropriate action, underlining the need for care and respect toward wildlife.

Finally, additive transitions appear in Examples (6), (7), and (8). In Example (6), the additive transition marker *aynı zamanda* "in addition" expands the description of biodiversity by extending it across different regions. In Example (7), the transition *ve* "and" links soil organisms to their collective role in enhancing soil fertility. In Example (8), a sequence of imperative verbs connected by *ve* "and" encourages children to listen to, observe, and explore nature. These additive structures support coherence and invite active engagement with ecological processes.

Overall, the use of transitions transforms isolated ecological facts into coherent and meaningful narratives of interdependence, renewal, and responsibility. Rather than presenting biodiversity, soil,

and forest life as separate domains, the examples guide children to understand ecological processes as interconnected and sustained through cooperation, diversity, and care.

3.1.2. Frame Markers

Frame markers are interactive metadiscourse markers that guide the audience through the organization of discourse (Hyland, 2005). The data analysis shows that, in children's ecological educational videos, frame markers help young viewers follow the narrative flow by sequencing ideas, labelling stages, and indicating topic shifts. Through these functions, ecological explanations of biodiversity, ecosystems, and sustainability are presented in an ordered, accessible way, allowing children to follow the information step by step. The examples below illustrate how frame markers function in the data.

(1) ***En baştan*** anlatmaya başlayalım. (Toprak Dersem Çık!; If I Say Soil, Come Out!) "Let's start from **the very beginning.**"

(2) ***Ardından*** çiçekler, solucanlar ve böcekler gelir. (Toprak Dersem Çık!; If I Say Soil, Come Out!) "**Afterwards**, flowers, worms, and insects arrive."

(3) ***İlk bakışta*** sadece ağaçlar dikkatinizi çekse de… (Ormandaki Yaşam; Life in the Forest) "**At first glance**, only the trees may catch your attention, but…"

(4) ***Son olarak*** daha az plastik kullanın ve atıklarınızı azaltın. (Yaşam Çeşit Çeşit; Life is Diverse) "**Lastly**, use less plastic and reduce your waste."

(5) ***Şimdi*** size gerçek bir toprak mühendisini tanıştıracağım. (Toprak Dersem Çık!; If I Say Soil, Come Out!) "**Now**, I will introduce you to a real soil engineer."

(6) *Gelin* ***şimdi*** *ormandaki ağaçların merak dolu yaşamlarına göz atalım*. (Ormandaki Yaşam; Life in the Forest) "Let's take a look at the curious lives of the trees in the forest **now**."

(7) ***Önce*** *onu tanımlamaya çalışalım: tüylerinin rengi, boyu, gagasının şekli…* (Doğada Gözlem; Observation in Nature) "**First**, let's try to describe it: the color of its feathers, its size, the shape of its beak…"

(8)*Herhangi bir canlı türü* ***ile ilgili*** *daha çok şey merak ediyorsanız doğa gözlemcisi olabilirsiniz.* (Doğada Gözlem; *Observation in Nature*) "If you want to learn more **about** any species, you can become a nature observer."

The examples show that sequencing devices are frequently used to organize ecological information. In Examples (2), (3), (4), and (7), markers such as *ardından* "afterwards", *ilk bakışta* "at first glance", *son olarak* "lastly", and *önce* "first" establish an ordered progression of explanation and attention. Through this sequencing, ecological processes and observations are presented step by step, allowing children to follow how natural elements develop, are noticed, or are evaluated over time.

Stage labelling is observed in Example (1). The expression *en baştan* "from the very beginning" signals the opening stage of the discourse and frames the explanation that follows. This marker prepares children for what is to come and highlights that ecological understanding unfolds gradually rather than instantaneously.

Topic shift markers occur in Examples (5), (6), and (8). Forms such as *şimdi* "now", *gelin şimdi* "now let us", and *… ile ilgili* "about" function as signals of a change in discourse focus. These expressions reorient attention from one ecological topic or explanatory segment to another by shifting the domain under discussion or expanding the scope of reference. In this way, topic shift markers guide viewers through changes in focus, helping maintain attention while introducing new ecological content.

In conclusion, frame markers in these videos transform ecological information into organized, accessible, and engaging stories. They do not merely help children follow a sequence but also construct beneficial stories of continuity, responsibility, and care. By shaping the order of discourse, frame markers align children's perception with the rhythms and cycles of the natural world, embedding ecological knowledge into narratives of cooperation, renewal, and ethical action.

3.1.3. Endophoric Markers

Endophoric markers are interactive metadiscourse markers that refer viewers to other parts of the same discourse by directing attention to upcoming information or by linking back to what has already been presented (Hyland, 2005). In children's nature-themed educational videos, these markers support coherence by helping young viewers connect different stages of explanation and observation. The data show that endophoric markers function in two main ways, referring either to next or to previous parts of the discourse. The examples below illustrate how these two types operate in the data.

(1) Hazır mısınız? Toprağın rengi içindeki maddeler ve canlılar **aşağıya** indikçe değişiyor. (Toprak Dersem Çık!; If I Say Soil, Come Out!) "*Are you ready? The color of the soil is changed as it goes* ***downwards*** *with its materials and living beings."*

(2) *Hadi* ***ilk gördüğümüz canlı*** *ile tanışarak başlayalım*. (Yaşam Çeşit Çeşit; Life is Diverse) "Let's start by meeting **the first creature we see**."

(3) ***Şuradaki*** *kuşa bakın*. (Doğada Gözlem; Observation in Nature) "Look at the bird **over there**."

(4) ***İşte bu kadar****, bir toprağın oluşması için binlerce yıl geçmesi gerekir*. (Toprak Dersem Çık!; If I Say Soil, Come Out!) "**That's it**, it takes thousands of years for soil to form."

(5) ***Unutma****, toprak ağaçları sever; ağaçlar da toprağı*. (Toprak Dersem Çık!; If I Say Soil, Come Out!) "**Remember**, the soil loves the trees, and the trees love the soil too."

(6) ***Fark ettiniz mi*** *buradaki ağaçlar birbirinden farklı?* (Yaşam Çeşit Çeşit; Life is Diverse) "**Did you notice that** the trees here are all different from one another?"

Next endophoric markers are observed in Examples (1), (2), and (3). In Example (1), the question *Hazır mısınız?* "Are you ready?" directs attention to the explanation that immediately follows, preparing viewers for upcoming information about soil formation. In Example (2), the phrase *ilk gördüğümüz canlı* "the first creature we see" refers forward to an entity that is about to be introduced, guiding viewers toward forthcoming visual content. Similarly, in Example (3), *şuradaki* "over there" points to the next focal element in the discourse, directing attention to an object that becomes immediately relevant.

Previous endophoric markers occur in Examples (4), (5), and (6). In Example (4), *İşte bu kadar* "That's it" signals closure by referring back to the explanation that has just been completed. In Example (5),

Unutma "Remember" recalls previously presented information, reinforcing the ecological relationship between soil and trees. In Example (6), the question *Fark ettiniz mi* "Did you notice" refers back to visual details already shown, prompting viewers to reflect on earlier observations.

Overall, these next and previous endophoric markers help children keep track of the discourse by connecting new information with what they have already seen, which supports understanding and helps build ecological awareness as environmental processes and relationships unfold throughout the videos. In this way, endophoric markers do not merely link parts of discourse but weave children into the narrative as attentive participants. They turn ecological education into a form of dialogue that encourages care, curiosity, and responsibility, aligning linguistic engagement with ecological values.

3.1.4. Metadiscoursal Evidentials

Metadiscoursal evidentials[4] are interactive metadiscourse markers that signal the source of knowledge, information, or claims. They allow speakers to attribute knowledge to direct observation, shared knowledge, or expert authority, thereby guiding the audience's trust in what is being said (Hyland, 2005). In children's nature-themed educational videos, evidentials are important because ecological information is not only presented as "facts" but also framed in ways that make knowledge appear reliable, understandable, and learnable for young viewers. Following Yang (2013), evidentials in the data can be grouped into four types: definitional/non-verbal, inferring, belief, and sensory/observational evidentials. The examples below illustrate how these evidential types function in the videos.

(1) *Yaşamdaki bu çeşitliliğe biyolojik çeşitlilik deriz*. (Yaşam Çeşit Çeşit; Life is Diverse) "This variety in life is called biological diversity."

(2) *Belirli bir yerde yaşayan farklı türdeki canlıların sayısını biyolojik çeşitlilik kavramı ile anlatırız.* (Yaşam Çeşit Çeşit; Life is Diverse) "The number of different species living in a certain area is explained by the concept of biodiversity."

(3) *Bir ormanda ne kadar çok farklı tür yaşıyorsa o orman daha güçlüdür*. (Yaşam Çeşit Çeşit; Life is Diverse) "The more different species live in a forest, the stronger that forest is."

(4) *Toprakta ne kadar çok farklı mikroorganizma varsa o toprak o kadar sağlıklıdır*. (Yaşam Çeşit Çeşit; Life is Diverse) "The more different microorganisms exist in the soil, the healthier the soil becomes."

(5) *Biliyor musunuz, biyolojik çeşitliliği korumak için yapabileceğiniz çok önemli şeyler var*. (Yaşam Çeşit Çeşit; Life is Diverse) "Did you know that there are very important things you can do to protect biodiversity?"

(6) *Ölü ağaçlar çürüdüğünde ormandaki bitkiler için besin, salyangoz ve mantar gibi canlılar için ise yuva olur*. (Ormandaki Yaşam; Life in the Forest) "When dead trees decay, they become food for plants and shelter for creatures like snails and fungi."

(7) *Ağaçlar kökleri sayesinde birbirlerini besler ve tedavi eder*. (Ormandaki Yaşam; Life in the Forest)

[4] Güçlü (2025a) introduced the term "metadiscoursal evidential" to clearly distinguish this discourse-level evidential function from the grammatical *-mIş* suffix in Turkish, which serves evidential and perfective meanings.

"Trees nourish and heal each other through their roots."

(8) *Toprak sayesinde ormanlarımız, ormanlar sayesinde de daha sağlıklı havamız olur*. (Toprak Dersem Çık!; If I Say Soil, Come Out!) "Thanks to soil we have forests, and thanks to forests we have cleaner air."

The examples show that evidentials play an important role in constructing ecological knowledge for children. Definitional or non-verbal evidentials, as seen in Examples (1) and (2), present biodiversity through naming and conceptual framing, allowing children to recognize key ecological concepts as stable and learnable. Inferring evidentials, illustrated in Examples (3), (4), and (8), rely on cause–effect reasoning to explain how diversity strengthens ecosystems, how microorganisms contribute to soil health, and how soil, forests, and air are interconnected. These inferential patterns help children understand ecological relations as logically structured rather than arbitrary. Belief evidentials, as observed in Example (5), frame ecological protection as meaningful and relevant by appealing to shared knowledge and concern, preparing children to view ecological information as something that matters beyond explanation. Sensory or observational evidentials, found in Examples (6) and (7), ground ecological processes in observable natural phenomena, presenting decay, nourishment, and cooperation in nature as processes that can be seen and understood. To conclude, these evidential types construct nature as a system that can be defined, reasoned about, valued, and observed, thereby supporting ecological awareness and reinforcing children's understanding of environmental interdependence.

3.1.5. Code Glosses

Code glosses are interactive metadiscourse markers that clarify meaning through exemplification or reformulation (Hyland, 2005). In educational texts, they play a key role in making abstract concepts more concrete and easier for children to understand. By providing specific examples or by restating information in simpler terms, code glosses guide the audience toward clearer comprehension. The examples below illustrate the use of code glosses in the data.

(1) *…doğadaki bu çeşitliliği her yerde görebiliriz, **mesela** yediğimiz aynı türde sebze ve meyveler bile farklı farklıdır*. (Yaşam Çeşit Çeşit; Life is Diverse) "…we can see this diversity everywhere in nature, **for example**, even the same type of vegetables and fruits we eat are all different."

(2) *Bir ormanda ne kadar çok farklı tür yaşıyorsa o orman daha güçlüdür **ya da** toprakta ne kadar çok farklı mikroorganizma varsa o toprak o kadar sağlıklıdır*. (Yaşam Çeşit Çeşit; Life is Diverse) "The more different species live in a forest, the stronger that forest is, **or** the more different microorganisms exist in the soil, the healthier the soil becomes."

(3) *Toprağın üst kısmı besin maddeleri bakımından çok zengindir; **yani** canlılar için yaşamsal öneme sahiptir*. (Toprak Dersem Çık!; If I Say Soil, Come Out!) "The upper part of the soil is rich in nutrients; **in other words**, it is vital for living beings."

(4) ***Bir anlamda**, orman büyük bir takım gibidir; her canlı bu takımın bir oyuncusudur*. (Yaşam Çeşit Çeşit; Life is Diverse) "**In a sense**, the forest is like a big team; every living being is a player in it."

(5) *Ölü ağaçlar çürüdüğünde ormandaki bitkiler için besin, salyangoz ve mantar **gibi** canlılar için ise yuva olur*. (Ormandaki Yaşam; Life in the Forest) "When dead trees decay, they become food for plants and shelter for creatures **such as** snails and fungi."

(6) *Bu ağ sayesinde ormandaki ağaçlar birbirleriyle iletişim kurar,* ***örneğin*** *meşe ağacı.* (Ormandaki Yaşam; Life in the Forest) "Through this network, the trees in the forest communicate with each other, **for example**, the oak tree."

(7) *Bir sonraki yıl aynı yerde aynı kuş türünü görürsek her şey yolunda* ***demektir****.* (Doğada Gözlem; Observation in Nature) "If the same bird species is seen in the same place the following year, **it means** everything is fine."

(8) *Biyolojik çeşitlilik, belirli bir yerde yaşayan farklı türdeki canlıların sayısını ifade eder;* ***başka bir deyişle****, yaşamın zenginliğini ölçer.* (Yaşam Çeşit Çeşit; Life is Diverse) "Biodiversity refers to the number of different species living in a certain area; **in other words**, it measures the richness of life."

The examples show that exemplification plays an important role in making ecological information concrete and relatable for children. In Examples (1), (5), and (6), markers such as *mesela* "for example", *gibi* "such as", and *örneğin* "for example" illustrate abstract ecological concepts through familiar and observable instances, including vegetables and fruits, animals such as snails and fungi, and specific tree types like the oak. By grounding biodiversity and ecological processes in everyday experiences and visible elements of nature, these exemplifications help children recognize ecological diversity as something present in their daily lives rather than as a distant or abstract idea. In this way, exemplification supports ecological awareness by turning general ecological principles into tangible and understandable examples.

Reformulation is used to restate and clarify ecological meanings through alternative expressions. In Examples (2), (3), (4), (7), and (8), markers such as *yani* "in other words", *bir anlamda* "in a sense", *demektir* "it means", and *başka bir deyişle* "in other words" rephrase prior statements and highlight their underlying significance. These reformulations simplify scientific information, explain causal relations, and emphasize interdependence within ecosystems, such as the links between forests, soil, and air. Through reformulation, complex ecological ideas are presented in clearer and more accessible terms, enabling children to grasp core meanings and relationships.

All in all, exemplification and reformulation show that code glosses in the videos do more than clarify information. They help children move from abstract ecological concepts to concrete understanding by combining everyday examples with reworded explanations. In this way, code glosses contribute to ecological awareness by making scientific knowledge understandable, relatable, and meaningful within children's everyday experience.

3.2.Interactional Metadiscourse Categories

3.2.1. Hedges

Hedges are interactional metadiscourse markers that express tentativeness, possibility, or limited commitment to a proposition, allowing authors to soften categorical claims and leave room for uncertainty (Hyland, 2005). Data analysis of this study showed that in educational texts, hedges typically appear through epistemic adverbs, epistemic adjectives and epistemic modal suffixes and they play an important pedagogical role by encouraging curiosity and helping children avoid perceiving ecological facts as rigid or absolute. The examples below illustrate how hedges are used in the data.

(1) ***Bazı*** *canlılar serin ve yağışlı ormanlarda, bazı canlılarsa sıcak ve kurak bozkırlarda yaşar.*

(Yaşam Çeşit Çeşit; Life is Diverse) "**Some** creatures live in cool and rainy forests, while others live in hot and dry steppes."

(2) ***Bazen*** *yol kenarında,* ***bazen*** *bahçede,* ***bazen*** *bir ormanda. Yanından geçtiğimiz, gölgesinde serinlediğimiz, dalından beslendiğimiz; canlıların yuva yaptığı, toprağın koruyucusu ağaçlar ve birlikte yaşadığı ormanlar.* (Ormandaki Yaşam; Life in the Forest) "**Sometimes** on the roadside, **sometimes** in the garden, **sometimes** in the forest. Trees, the guardians of the soil and homes for countless creatures that we pass by, rest under, and feed from, together with the forests they live in."

(3) *Kaldırımlardan bahçelere kadar mis kokan çiçekler, göç eden ya da her yerde sesleriyle bizi çağıran çeşit çeşit kuşlar. Onları* ***hemen*** *her yerde görebiliriz.* (Doğada Gözlem; Observation in Nature) "From pavements to gardens, fragrant flowers, and birds of many kinds, migrating or calling us with their voices everywhere. They can be seen **almost** everywhere."

(4) *Peki ama mevsimlerin değiştiğini nasıl anlıyor ol****abil****irler?* (Ormandaki Yaşam; Life in the Forest) "But how **could** they possibly know that the seasons are changing?"

(5) ***Belki*** *de dikkatinizi çeken onlarca farklı canlı ile ya da çok özel bir bitki ile karşılaş****acak****sınız.* (Doğada Gözlem; Observation in Nature) "**Perhaps** you **will** encounter dozens of different creatures that catch your attention, or a very special plant."

(6) ***Biraz*** *daha dikkatli olursanız* ***belki*** *ağaçların birbirleriyle nasıl konuştuklarını da duy****abil****irsiniz.* (*Ormandaki Yaşam*; *Life in the Forest*) "If you pay **a little** more attention, you **might perhaps** even hear how the trees talk to each other."

(7) *Hayvansal ve bitkisel besinlerimizin* ***neredeyse*** *tamamı topraktan gelir.* (Toprak Dersem Çık!; If I Say Soil, Come Out!) "**Almost** all of our animal- and plant-based foods come from the soil."

(8) ***Bazen*** *yol kenarında, bazen bahçede, bazen bir ormanda ağaçlarla karşılaşırız.* (Ormandaki Yaşam; Life in the Forest) "**Sometimes** by the roadside, sometimes in the garden, sometimes in a forest… we encounter trees."

These examples show that hedges play an essential role in constructing ecological knowledge with nuance in children's nature-themed educational videos. Hedging in the data is mainly realized through epistemic adverbs, which allow ecological information to be presented with flexibility rather than certainty. In Examples (2) and (8), *bazen* "sometimes" shows that encounters with trees do not happen all the time but depend on place and situation. In Example (3), *hemen her yerde* "almost everywhere" suggests that flowers and birds are widely found, while still leaving space for exceptions. A similar softening effect appears in Example (7) with *neredeyse* "almost", which reduces the strength of the statement about food sources coming from soil. In Examples (5), (6), and (9), *belki* and *belki de* "perhaps" further highlight possibility by framing encounters with living beings as likely but not guaranteed.

Hedging is also constructed through epistemic adjectives that narrow down meaning. In Example (1), the use of *bazı* "some" avoids sweeping generalizations about where species live. Instead of suggesting that all living beings follow the same pattern, biodiversity is presented as something that changes across environments.

Another way uncertainty is expressed is through epistemic modal suffixes, especially *–(y)Abil* and *–(y)AcAk*, which mark possibility and prediction rather than certainty. In Example (6), the suffix *–(y)Abil* in *duyabilirsiniz* "you may hear" presents tree communication as potentially observable and dependent on attention and effort, avoiding a categorical claim. In Example (5), the future marker *–(y)AcAk* in *karşılaşacaksınız* frames upcoming encounters as expected but not guaranteed, signalling prediction rather than factual certainty. These modal suffixes present ecological processes as open to observation and interpretation. From an ecolinguistic perspective, such forms support a curiosity-oriented narrative by resisting deterministic explanations and inviting children to explore how nature functions.

On the whole, these examples show that hedging in the videos is built through everyday language choices that gently limit certainty. By avoiding absolute statements and allowing room for possibility, the videos present ecological knowledge as something to be explored and observed, supporting a curious and open approach to nature.

3.2.2. Boosters

Boosters are interactional metadiscourse markers that express certainty, emphasis, and strong conviction (Hyland, 2005). In contrast to hedges, which introduce tentativeness and allow room for alternative interpretations, boosters reinforce the speaker's or writer's stance by signalling confidence in the validity of a proposition. The analysis of the data reveals that, in children's ecological texts, important ecological ideas related to biodiversity, soil, and forest life are conveyed through boosters realized mainly by universal pronouns and amplifying expressions, ensuring that such messages are perceived by young audiences as significant, memorable, and non-negotiable. Below, examples of boosters identified in the data are presented.

(1) ***Hepsi*** *domates ama hepsi farklı.* (Yaşam Çeşit Çeşit; Life is Diverse) "They are **all** tomatoes, but each one is different."

(2) *İşte bu kadar, bir toprağın oluşması için* ***binlerce*** *yıl geçmesi gerekir.* (Toprak Dersem Çık!; If I Say Soil, Come Out!) "That's it, it takes **thousands of** years for soil to form."

(3) *Sadece bu kadar da değil; yaşamamız için gerekli hemen* ***her şey*** *için toprağa ihtiyacımız vardır.* (Toprak Dersem Çık!; If I Say Soil, Come Out!) "It is not only this; almost **everything** necessary for our survival depends on the soil."

(4) ***Tüm*** *bu gözlemlerinizi yazacağınız bir gözlem defterini tutmak keyifli olmaz mı?* (Yaşam Çeşit Çeşit; Life is Diverse) "Wouldn't it be enjoyable to keep an observation diary where you record **all** these observations?"

(5) *Ormanların yok olmasını ya da göllerin sayısının azalmasını istemeyiz. Bu güçlü takımlar* ***hiçbir*** *üyesini kaybetmemeli.* (Yaşam Çeşit Çeşit; Life is Diverse) "We do not want forests to disappear or the number of lakes to decrease. These strong teams should lose **none** of their members."

(6) ***Herkes****in doğada birbirine ihtiyacı var.* (Yaşam Çeşit Çeşit; Life is Diverse) "**Everyone** in nature needs one another."

Boosting in the data is realized through universal pronouns, which frame ecological relations as complete, inclusive, and unquestionable. In Example (1), *hepsi* "all" strengthens the message that

diversity applies to every member within a shared category. By repeating *hepsi*, the statement reinforces biodiversity as a general ecological principle rather than an exception. In Example (3), *her şey* "everything" expands the scope of dependence on soil, presenting it as essential for life in a broad and comprehensive sense. Similarly, in Example (4), *tüm* "all" gathers observations into a unified whole, suggesting that ecological understanding requires attention to everything rather than selected details. In Example (5), *hiçbir* "none" functions as a strong universal negator by presenting ecological loss as unacceptable. By stating that strong ecosystems should lose *no* members, the discourse frames protection as absolute and non-negotiable.

Another booster pattern is constructed through amplifiers, which increase the perceived scale and significance of ecological processes. In Example (2), *binlerce* "thousands of" intensifies the timescale of soil formation, highlighting the vast duration required for natural processes to unfold. This amplification strengthens the authority of the ecological explanation by foregrounding magnitude and permanence, guiding children to view soil formation as a long-term, serious process rather than something immediate or easily reversible.

Overall, these booster forms present ecological knowledge as stable, comprehensive, and firm. Through universality and scale, the videos guide children toward strong interpretations of nature as a complete system that develops over long periods and requires full protection and care.

3.2.3. Attitude Markers

Attitude markers are interactional metadiscourse devices that express the writer's or speaker's affective stance, value judgments, or obligation toward the propositional content. They signal approval, importance, necessity, or emotional involvement, guiding the audience to share not only knowledge but also evaluation (Hyland, 2005). In children's nature-themed educational videos, attitude markers are found to foster children's admiration, care, and sense of responsibility toward nature through attitudinal adjectives, deontic modal suffixes, and deontic lexical verbs. Below are examples of attitude markers identified in the data.

(1) *Yaşam çeşit çeşit, ne **güzel** bir manzara; doğada nereye bakarsanız başka başka şeyler görürsünüz…* (Yaşam Çeşit Çeşit; Life is Diverse) "Life is diverse, what a **beautiful** view; wherever you look you see different things…"

(2)*Ve onları ürkütmemek için ani hareket etmemeye ve çok renkli kıyafetler yerine dikkat çekmeyen renklerde giyinmeye özen göster**meli**yiz.* (Doğada Gözlem; Observation in Nature*)* "And to avoid frightening them, we **should** take care not to make sudden movements and wear unobtrusive colors instead of very bright clothes."

(3)*Canlıları izlerken yuvalarına dokunmamak, onların doğal yaşam alanlarına zarar vermemek çok **önemli**dir*. (Doğada Gözlem; Observation in Nature*)* "While observing living beings, it is very **important** not to touch their nests and not to harm their natural habitats."

(4) *Bu yüzden… canlı türlerini ve onların yaşam alanlarını tanımamız ve korumamız **gerekiyor***. (Yaşam Çeşit Çeşit; Life is Diverse) "For this reason, we need to recognize species and their habitats and we **must** protect them."

(5) *Tüm bu gözlemlerinizi yazacağınız bir gözlem defteri tutmak **keyifli** olmaz mı?* (Yaşam Çeşit Çeşit;

Life is Diverse) "Wouldn't it be **enjoyable** to keep a notebook of your observations?"

(6) *…birlikte yaşadığımız bu **muhteşem** komşularımız aslında sandığımızdan da zeki, çalışkan ve yardımsever canlılar*. (Ormandaki Yaşam; Life in the Forest) "These **magnificent** neighbors we live with are in fact smarter, hardworking, and helpful."

(7) *…ama hepsinden önemlisi çok sabırlı olmak **zorunda**yız*. (Doğada Gözlem; Observation in Nature) "…but most importantly, we **must** be very patient."

(8) *Biyolojik çeşitliliği korumak için yapabileceğiniz çok **önemli** şeyler var*. (Yaşam Çeşit Çeşit; Life is Diverse) "There are very **important** things you can do to protect biodiversity."

Attitudinal adjectives such as *güzel* "beautiful", *keyifli* "pleasant", *muhteşem* "magnificent", and *önemli* "important" are used to positively evaluate nature, ecological practices, and environmental responsibility. In Example (1), the expression *ne güzel bir manzara* "what a beautiful view" assigns aesthetic value to biodiversity, encouraging children to associate natural diversity with visual and emotional pleasure. Similarly, Example (6) describes animals as *muhteşem komşularımız* "our magnificent neighbours", constructing an appreciative and respectful attitude towards non-human beings. The adjective *önemli* "important" appears prominently in Examples (3) and (8)—*çok önemlidir* "it is very important" and *çok önemli şeyler* "very important things"—marking ecological protection as morally significant and worthy of attention. Through such evaluative adjectives, nature and ecological action are framed as valuable, meaningful, and deserving of care.

Deontic meaning is mainly conveyed through grammatical and lexical forms that encode obligation and necessity. The deontic modal suffix *-mAlI* "should" is used to guide behaviour in relation to nature by presenting certain actions as expected rather than optional. In Example (2), *özen göstermeliyiz* "we should take care" encourages careful conduct when observing living beings, framing restraint and sensitivity as socially shared norms. Similarly, in Example (7), *sabırlı olmak zorundayız* "we must be patient" presents patience as a necessary condition for interacting with nature, reinforcing discipline and responsibility as core values of ecological engagement.

The deontic lexical verb *gerek-* and its form *gerekiyor* "is necessary" further strengthen the expression of obligation. In Example (4), the statement *korumamız gerekiyor* "we need to protect" positions environmental protection as an unavoidable duty rather than a personal preference. This formulation conveys necessity in a relatively soft but firm manner, aligning ecological care with common sense and moral responsibility shared by the community.

In addition to obligation-based forms, positive affect is mobilized to encourage participation. The attitudinal adjective *keyifli* "pleasant" introduces an affective stance that contrasts with deontic pressure. In Example (5), *keyifli olmaz mı?* "wouldn't it be enjoyable?" frames ecological observation as a pleasurable and rewarding activity. By inviting enjoyment alongside responsibility, this evaluative choice supports engagement without reducing ecological action to duty alone.

To sum up, the interactional resources examined here combine attitudinal evaluation with deontic obligation to construct a discourse that integrates admiration, necessity, and ethical commitment. Through this combination, children are positioned not only as observers of nature but as ethically responsible participants in ecological systems. In this way, the discourse resists destructive framings of nature as indifferent or exploitable and instead promotes an ecological imagination grounded in care,

responsibility, and active participation.

3.2.4. Self-Mentions

Self-mentions are interactional metadiscourse markers that highlight the narrator's own presence and authority in discourse. They show that the knowledge, explanation, or perspective comes directly from the narrator, without explicitly involving the audience. (Hyland, 2005). In the ecological educational videos, self-mentions are realized exclusively in explicit form, establishing the narrator as a knowledgeable guide and framing the discourse as a personal act of explanation. The following examples illustrate explicit self-mentions identified in the data:

(1) *En baştan anlatmaya başlayacağ**ım***. (Toprak Dersem Çık!; If I Say Soil, Come Out!) "**I** will start explaining from the very beginning."

(2) *Şimdi size gerçek bir toprak mühendisini tanıştıracağ**ım***. (Toprak Dersem Çık!; If I Say Soil, Come Out!) "Now **I** will introduce you to a real soil engineer."

(3) *Toprağın öyküsünü ne kadar anlat**sak** bitiremey**iz***. (Toprak Dersem Çık!, If I Say Soil, Come Out!) "**We** could never finish telling the story of the soil."

(4) *Size anlatacağı**mız** çok şey var*. (Toprak Dersem Çık!, If I Say Soil, Come Out!) "There are so many things **we** will tell you."

In Examples (1) and (2), the use of first-person singular verb forms in *anlatacağım* "I will explain" and *tanıştıracağım* "I will introduce" explicitly positions the narrator as an individual authority and guide. Ecological knowledge is framed as a personal act of explanation, disclosing the narrator's responsibility for organizing and delivering information. The singular form shows ownership of knowledge and strengthens narrative guidance by foregrounding the narrator's role as the primary mediator.

In contrast, Examples (3) and (4) employ first-person plural forms *anlatsak* "we could tell" and *anlatacağımız* "we will tell", which construct an authorial "we." Importantly, this "we" does not function as an inclusive engagement strategy addressing the audience. Instead, it presents ecological knowledge as collectively held by narrators or expert voices. Through this choice, authority is distributed across a collective source while maintaining a narrator-centred orientation of self-mention rather than inviting direct audience participation.

From an ecolinguistic perspective, these self-mentions contribute to the construction of guidance-oriented ecological narratives. More specifically, the explicit self-mentions observed in the data position the narrator as a knowledgeable mediator between children and ecological knowledge. They reinforce authority, coherence, and continuity in the discourse while maintaining a clear distinction from audience-directed engagement strategies.

3.2.5. Engagement Markers

Engagement markers are interactional metadiscourse devices that explicitly include the audience in the discourse. They invite readers or listeners to participate, guide their attention, or appeal to shared knowledge (Hyland, 2005). In ecological educational videos, engagement markers play a crucial role in building interactivity and keeping children actively involved in the learning process through reader

pronouns, inclusive *we*, directives, rhetorical questions. Below are examples of engagement markers identified in the data.

(1) *Hazır **mısınız**?* (Toprak Dersem Çık!; If I Say Soil, Come Out!) "**Are you** ready?"

(2) *Hadi ilk gördüğ**ümüz** canlı ile tanışarak başlay**alım**.* (Yaşam Çeşit Çeşit; Life is Diverse) "**Let's** start by meeting the first creature **we** see."

(3) *Şuradaki kuşa bak**ın**.* (Doğada Gözlem; Observation in Nature) "**Look** at that bird over there."

(4) ***Unutma**, toprak ağaçları, ağaçlar da toprağı sever*. (Toprak Dersem Çık!; If I Say Soil, Come Out!) "**Remember**, soil loves trees and trees love soil."

(5) *Biliyor **musunuz**, biyolojik çeşitliliği korumak için yapabileceğiniz çok önemli şeyler var*. (Yaşam Çeşit Çeşit; Life is Diverse) "**Do you** know, there are very important things you can do to protect biodiversity."

(6) *Biraz daha dikkatli olursanız belki ağaçların birbirleriyle nasıl konuştuklarını da duyabilir**siniz***. (Ormandaki Yaşam; Life in the Forest) "If you pay a little more attention, maybe **you** can even hear how the trees talk to each other."

(7) *Daha sonra gözlemlerimizi kaydetmek için bir gözlem defteri, kalem ve fotoğraf makinesi de keyifli olmaz mı**?*** (Doğada Gözlem; Observation in Nature) "Wouldn't it also be enjoyable to keep an observation notebook, a pen, and a camera to record our observations later on?"

(8) *Onları ürkütmemek için uzaktan izle**meliyiz***. (Doğada Gözlem; Observation in Nature) "**We should** observe them from a distance so as not to frighten them."

Reader pronouns are used to directly address children and position them as active participants in the discourse. In Example (1), *Hazır mısınız?* "Are you ready?" employs the second person plural interrogative suffix, immediately foregrounding the audience's presence and readiness. Similarly, Example (5), *Biliyor musunuz,* "Do you know," explicitly addresses children through the second person plural form and prepares them cognitively for the information that follows. In Example (6), second person plural suffixes in *olursanız* "if you pay" and *duyabilirsiniz* "you may hear" directly appeal to children's perceptual abilities, encouraging attentive observation. Through these reader-oriented forms, the discourse establishes proximity and involvement, drawing children into ecological learning as addressed and responsive participants rather than distant listeners.

Inclusive *we* is employed to construct ecological learning as a shared experience between the narrator and the audience. In Example (2), first-person plural forms in *gördüğümüz* "we see" and *başlayalım* "let's start" frame observation as a joint activity initiated collectively. Similarly, Example (7) uses *gözlemlerimizi* "our observations" to situate children and the narrator within the same experiential frame, reinforcing collective ownership of the learning process. In Example (8), *izlemeliyiz* "we should observe" further strengthens this inclusivity by presenting ethical behaviour as a shared responsibility. Through inclusive *we*, ecological engagement is represented not as an individual task but as a cooperative and communal practice.

Directives play a central role in guiding children's actions and attention toward environmentally

responsible behaviour. In Example (2), the imperative form *başlayalım* "let's start" initiates action while maintaining a collaborative tone. Example (3) uses the imperative *bakın* "look" to explicitly direct children's visual focus toward a living being in nature. Similarly, Example (4), *Unutma* "remember," frames ecological knowledge as memorable and ethically significant. In Example (8), the deontic modal suffix in *izlemeliyiz* "we should observe" presents careful observation as a moral obligation rather than an optional behaviour. These directives structure ecological learning as guided, purposeful, and ethically grounded.

Rhetorical questions are used to develop interaction and invite reflection rather than to solicit literal answers. In Example (1), *Hazır mısınız?* "Are you ready?" functions as an opening move that prepares children for participation. Similarly, Example (5), *Biliyor musunuz?* "Do you know," stimulates curiosity and shared attention before introducing ecological responsibility. In Example (7), *keyifli olmaz mı?* "Wouldn't it be enjoyable?" encourages voluntary engagement by framing ecological activities as enjoyable rather than obligatory. Through rhetorical questions, ecological learning is presented as dialogic and participatory, transforming narration into an interactive exchange that values children's involvement and reflection.

Overall, the engagement markers detected in the analysis guide attention, prompt reflection, and frame ecological behaviour as a shared and meaningful practice. Rather than positioning children as passive recipients of information, the videos construct them as attentive observers and ethically responsible participants in ecological processes. From an ecolinguistic perspective, engagement markers support beneficial stories of shared journey, care, discovery, attentiveness, joy, and responsibility, enabling children to co-construct meaning and actively participate in protecting biodiversity.

Conclusion

This study investigates how metadiscourse is used in children's nature-themed educational videos and how it contributes to the construction of ecological awareness and ethical understanding. This study introduces the concept of *eco-metadiscourse*, which refers to the ways in which discourse simultaneously (1) structures communication and (2) embeds ecological values, responsibilities, and worldviews. In this perspective, metadiscursive devices are not merely tools for textual cohesion or interactional alignment; they are also carriers of ecological meaning. Eco-metadiscourse therefore highlights how linguistic resources narratively construct ecological awareness, turning language into a vehicle for responsibility, attentiveness, and care. Using an integrative qualitative discourse-analytic approach that combines Hyland's (2005) metadiscourse framework with Stibbe's (2015) ecolinguistic perspective, the study qualitatively analyzes four nature-themed educational videos produced by the TEMA Foundation, focusing on interactive and interactional metadiscourse categories.

The findings show that eco-metadiscourse plays an important role in the ecological storytelling in these videos. Rather than serving as neutral connectors or organizational devices, metadiscourse markers actively shape ecological meaning, presenting nature as a dynamic web of interdependence and care. Interactive resources play a role in clarifying the logical and conceptual organization of ecological processes. As interactive metadiscourse categories, transitions and frame markers organize ecological information through sequencing and logical relations, in this way ecological topics are presented as connected processes rather than isolated facts. Endophoric markers help children follow the flow by linking earlier and later parts of the discourse. Evidentials and code glosses further strengthen understanding by grounding ecological concepts in observation and definition, while clarifying

meanings through explanation and example. These interactive resources shape ecological explanations into coherent and accessible narratives, helping children make sense of ecological interdependence and cyclical natural processes in a structured and meaningful way.

Interactional resources work to articulate ethical stances, responsibility, and participatory awareness. Hedges keep the discourse open by leaving space for possibility and observation, while boosters give emphasis to main ecological points. Attitude markers bring together appreciation and obligation, presenting care for nature as both meaningful and necessary. Through self-mentions, the narrator serves as a guiding voice, and engagement markers draw children into the discourse through questions, directives, and inclusive forms. In this way, ecological learning takes shape as participatory, emotionally engaging, and ethically grounded. As a result, ecological learning is presented as participatory, emotionally engaging, and ethically grounded. From an ecolinguistic perspective, these patterns move away from harmful views of nature as silent, mechanical, or disposable. Instead, they promote more positive narratives that highlight interdependence, cyclical processes, attentiveness, and responsibility, portraying nature not as a passive object of knowledge but as an active partner in coexistence.

Despite the small dataset and the qualitative design, the study shows that ecological discourse in children's media is not only informational but also strongly metadiscursive: it structures understanding while embedding responsibility and care. Future studies could test the framework on larger datasets, use mixed methods to examine distributional patterns, apply other metadiscourse models, and conduct cross-cultural analyses to explore how ecological values are discursively shaped across languages and educational contexts. In practical terms, eco-metadiscourse serves as a useful framework for researchers, educators, and content creators, showing how linguistic choices can support ecological comprehension, engagement, and ethical awareness in young audiences and informing future ecopedagogical research.

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