

The Meeting of Generative Artificial Intelligence (GAI) and the Large Language Model (LLM): An Application on Book Covers

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Abstract

In parallel with the development of computer technologies, artificial intelligence and related technologies are also developing rapidly. Artificial intelligence is manifested with practical and helpful applications in almost every field. One of the most remarkable of these applications is creating visuals with generative artificial intelligence. Generative AI refers to artificial intelligence models designed to generate new content in the form of written text, audio, image or video. Applications such as Midjourney, Dall-E and Leonardo AI are known to be the most preferred applications for generating images with generative AI. What these applications have in common is that a text input is given for the image generation process. While text input alone may be sufficient, more detailed and desired results can be obtained by specifying some parameters.

This study redesigned the covers of X children's books using Gemini and Midjourney artificial intelligence tools. The children's book covers were first analyzed textually with Google's Gemini artificial intelligence tool, and the outputs obtained were entered into the Midjourney artificial intelligence image generation tool with specific parameters to obtain visuals. In this context, the study is designed in a way that has never been addressed before in the literature, and in this respect, it stands out with the fact that the human factor is almost never involved in the process. In the study, how Gemini and Midjourney, one of the most up-to-date technologies, are used is explained in detail for the benefit of future researchers, and the results obtained are analyzed by matching the original data. The study will significantly contribute to the field as it is the first research in this field and explains the technique with its parameters.

Keywords: book cover, graphic design, fine arts, artificial intelligence, gemini.

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1. Introduction

Artificial intelligence (AI) is a field in which computer systems aim to mimic or surpass human intelligence. These systems can perform complex tasks such as data analysis, decision making, language understanding and generation. Artificial intelligence includes many disciplines such as computer science, mathematics, statistics, psychology and neuroscience. Thanks to artificial intelligence applications, today it is possible to perform voice modification, text reading, text generation, text editing, text synthesis, video editing, visual creation, editing, workflow editing, workflow creation and many similar operations. One of the application areas of AI is the field of image processing and production. Studies in this field include applications that can be used in many sectors such as fine arts, industrial design, medicine and automotive. AI-based image processing tools can perform tasks such as photo editing, image generation and object recognition.

In particular, in recent years, with innovative techniques such as GANs (Generative Adversarial Networks), great progress has been made in the field of image generation. The applications of AI in the field of voice are also quite diverse. Speech recognition systems are used to understand and respond to people's natural language, while voice synthesis technologies offer impressive audio experiences by creating artificial voices. In the field of music creation, AI algorithms support musical creativity by generating rhythms, melodies and harmonies. These applications increase the creativity of artists and musicians and enable the discovery of new sounds. Artificial intelligence applications in the field of language are also widely used. Natural language processing (NLP) systems are used in many areas such as text analysis, translation and content creation. These systems help humans automate language-based tasks and overcome language barriers. Examples of natural language processing include. Google's search engine has the ability to detect the language of someone speaking live with Skype and translate it into another language (Sucu & Ataman, 2020). In particular, large language models and deep learning techniques have led to great advances in language processing.

It can be said that artificial intelligence technology makes things easier in many areas such as business, health, education and communication. Artificial intelligence applications take place in many areas where people are present, from the finance sector to the marketing sector, from production to transportation (İmamoğlu & İmamoğlu, 2021). Automated data analysis and decision support systems enable businesses to access better information and make better decisions. In healthcare, AI-based medical imaging systems improve diagnosis and treatment processes. In education, personalised learning experiences and automated assessment systems enable students to learn more effectively. Today, when artificial intelligence studies in education are analysed, it can be seen that not only knowledge-based, but also data and logic-based artificial intelligence and artificial intelligence applications can be found in almost every field (Arslan, 2020). In communication, natural language processing systems are used in customer service and communication platforms to increase interaction. However, there are also some concerns about the use of artificial intelligence technology. In particular, it is important that automated decision-making systems should be fair, transparent and unbiased. There are also concerns about issues such as data privacy, security and ethical use.

The continuous updating and development of artificial intelligence technology enables applications in this field to be carried to more advanced levels day by day. Image processing and production tools are known to attract great interest, especially in the field of fine arts. With the advancement of technology, the efficiency obtained from these artificial intelligence platforms is increasing to better meet the needs of users. These developments enable users to find the most suitable results for their own preferences, making the use of artificial intelligence technology more widespread. Artificial intelligence technology offers innovative solutions that make people's lives easier in many areas. Advances in areas such as image processing, audio processing and language processing are examples of the most prominent areas in developing the use of artificial intelligence technology. However, care should be taken about the ethical, security and social impacts of the technology. Artificial intelligence technology has a wide range of uses in the fields of sound, image and language. This ever-evolving technology offers innovative solutions in many fields such as art, music, communication and information processing. AI-based tools offer a powerful set of tools to increase the creativity and productivity of users, which enables the technology to become widespread and increase its use.

The combination of artificial intelligence (AI) and big language models (LLM) is a real revolution in science and technology. According to Pirim (2006), there are three major events in history. The first of these is the formation of the universe, the second is the beginning of life, and the third is the emergence of artificial intelligence. Artificial intelligence can be defined as a broad category consisting of many algorithms and applications that aim to imitate human intelligence. On the other hand, big language models are artificial intelligence models that perform language processing tasks using large amounts of language data. The combination of these two technologies enables humans and systems to understand linguistic information and perform language-based tasks. This has led to significant innovations and developments in various industries and disciplines. It is clear that in recent years, studies in the field of science and technology, artificial intelligence and related technologies have gained impressive momentum. Artificial intelligence manifests itself with effective and helpful applications used in various fields, and one of the most remarkable examples of these applications is creating images with generative artificial intelligence. Generative artificial intelligence refers to artificial intelligence models designed to produce new content in written text, audio, image or video formats.

Generative artificial intelligence (GAI) deals with the design of artificial intelligence models to produce new content in text, audio, image or video formats. By definition, generative AI is a set of tools capable of producing high-quality artistic material for various creative fields, including visual arts, music, literature, video and animation. In particular, the advances made in recent years in the production of visual content are remarkable.

Productive artificial intelligence platforms such as Midjourney, Dall-E and Leonardo AI are pioneers in this field. These applications allow users to create a variety of visual content based on text inputs. In the visual production of generative AI, a textual command (prompt) is usually followed by a search of a database of works of the relevant artistic styles (movements), the characteristics of the painting form (photograph, painting, graphic, etc.), if any, and the technical characteristics of the painting tool (lens, brush, resolution, etc.) play an important role. When users specify a concept or idea, a visual representation is automatically generated by these AI tools. These images automatically generated by AI have many uses. One of them can be said to be children's books.

Children's books are a widely used tool to attract children's attention for educational and entertainment purposes. Book covers are considered an important element that summarizes the content of the book and attracts the reader's attention. In children's books, the cover is the first important stimulus that enables the child to turn towards the book (Arkan & Samur, 2020). The cover of the book should be interesting and give clues about the theme of the book (Gönen, Uludağ, Tanrıbuyurdu, & Tüfekçi, 2014). A correct book cover can attract the attention of the target audience and provide clues about the content of the book. Therefore, the design of book covers is of great importance. Today, this situation is also valid for designs created with artificial intelligence tools.

In this study, Gemini and Midjourney artificial intelligence platforms were preferred to create the designs. Gemini is an artificial intelligence tool with textual analysis capability provided by Google. Google Gemini is an AI model like OpenAI's GPT. The major difference is that Gemini, like other LLMs, can understand and generate text, while also being able to locally understand, work on and combine other types of information such as images, audio, video, and code. Midjourney is a generative AI programme and service created and hosted by Midjourney, Inc., an independent research lab based in San Francisco. Midjourney generates images from natural language descriptions called prompts, like OpenAI's DALL-E and Stability AI's Stable Diffusion. In summary, with Midjourney, visual content can be created using text input. These two artificial intelligence tools were used to complement each other, and it was aimed to design a new cover image for the same book based on the original book covers.

2. Method

Visuals were produced on the artificial intelligence platform. This visual production process was limited to 19 children's books and the books were randomly selected without any correlation between them. In this sense, the study is the first study in the field that was carried out completely experimentally.

In the study, the covers of the children's books were first photographed and asked to be analyzed textually on the Google Gemini platform. At this point, Gemini converted all visual content visible in the uploaded photograph into text. The text data obtained was processed using various parameters on the Midjourney artificial intelligence platform running on a Discord server, and the image generation phase was started. The detailed contents of the mentioned processes are given in Table 1.

In Table 1, the name of the book, the text output from the Gemini platform and the parameters used in the Midjourney platform are given in detail. The Turkish data obtained from the Gemini platform was translated into English and used as prompt in the Midjourney platform. This is because Midjourney currently has a BDM that only recognizes the English language.

Some of the outputs obtained from Gemini were found to be insufficient for image generation in Midjourney, so some improvements had to be made in the prompts to be given to Midjourney. In order to minimize the human factor in this improvement process, another artificial intelligence tool, Midjourney Prompt Generator, was used. Accordingly, the data received from Gemini were first translated into English, then the descriptive and narrative data were increased in the Prompt Generator, and the resulting prompt was processed to create an image in Midjourney. Apart from this, some expressions that were insufficient to describe the image were completed by the researcher.

For this process, which was finalized in Midjourney, to produce images as desired, various parameters had to be added to the prompts used. When the Midjourney column of the Table is analyzed, it is seen that there are expressions such as --ar, -v5 or -v5.1 at the end of the prompts. These expressions directly affect the results of the images to be obtained from the prompts given to the platform. For example, the term --ar is used to specify the dimensions of the image to be produced, while -v5 specifies the version of the image production model.

There are several image generation models available on the Midjourney platform. Each of these models is released as a new update and therefore different results can be obtained. In this study, different models were

tested to produce images that can be used on book covers and the most appropriate results were shared.

Table 1. Prompts created for image generation.

	Book Name	Text Analyzes in Gemini (Turkish)	Prompt for Midjourney
1	Küçük Prens	Beyaz: Görselin hakim rengi beyazdır. Beyaz renk, saflığı, masumiyeti ve sonsuzluğu temsil eder. Bu renkler, Küçük Prens'in saf ve masum bakış açısını ve hikayenin fantastik ve gizemli doğasını yansıtmak için kullanılabilir. Mavi: Görselin arka planında ve yıldızlarda kullanılan mavi renk, huzur, sakinlik ve sonsuzluğu temsil eder. Bu renkler, Küçük Prens'in uzaydaki seyahatlerini ve evrenin gizemini yansıtmak için kullanılabilir. Sarı: Küçük Prens'in saçları, fuları ve yıldızların etrafındaki halkada kullanılan sarı renk, neşe, umut ve iyimserliği temsil eder. Bu renkler, Küçük Prens'in maceraperest ve meraklı ruhunu yansıtmak için kullanılabilir. Kahverengi: Asteroit ve Küçük Prens'in pantolonu için kullanılan kahverengi renk, doğallığı ve sadeliği temsil eder. Bu renkler, Küçük Prens'in basit ve yalın yaşam tarzını yansıtmak için kullanılabilir. Kırmızı: Küçük Prens'in fularında ve yıldızların etrafındaki halkada kullanılan kırmızı renk, enerji, heyecan ve tutkuyu temsil eder. Bu renkler, Küçük Prens'in uzaydaki seyahatlerinin heyecanını ve macerasını yansıtmak için kullanılabilir.	White: The dominant color of the image is white. The color white represents purity, innocence and eternity. These colors can be used to reflect the pure and innocent perspective of the Little Prince and the fantastic and mysterious nature of the story. Gray: The planet lying under the Little Prince's feet is grey. The color gray represents stagnation, melancholy and uncertainty. This color shows that the Little Prince's house is a different and unknown place from the world. Light Green: The Little Prince's dress and trousers are light green. The color light green represents growth, renewal and hope. These colors may be an indication of the Little Prince's innocent soul and hopes for life. Yellow: The Little Prince's hair is yellow. The color yellow represents joy, hope and optimism. These colors can be used to reflect the adventurous and curious spirit of the Little Prince. Red: The red color used on the collar of the Little Prince's trousers and on the sky represents energy, excitement and passion. These colors can be used to reflect the excitement and adventure of the Little Prince's travels in space. Characters: The Little Prince: The Little Prince is the main character of the book. He is standing on a gray planet in the middle of the image. She has short blonde hair and a light green dress and trousers. In the picture, the color is white, it is a perfect children's dress and her trousers are light green, and there is a red collar on the collar. It is an adventurous and dreamy picture.--ar 2:3 -v5.1
2	Müge Her Şeyi Ölçüyor	Müge: Ana karakter olan Müge, ön kapağın sol tarafında, pembe bir tişört ve kot pantolon giymiş şekilde tasvir edilmiştir. Saçları kısadır ve kahverengidir. Gülümsemektedir ve elinde bir mezura tutmaktadır.	Müge: The main character, a girl Müge, is depicted on the left side of the front cover, wearing a pink T-shirt and jeans. His hair is short and brown and he has a blue hat. He is smiling and holding a tape measure in his hand. There is a dog in front of him, a white dog stretching its paw towards the measuring tape. Mathematical Symbols: On the right

			side of the front cover, there are different mathematical symbols. These symbols include addition, subtraction, multiplication, division, equal and not equal signs, numbers and units of measurement. Background: Background is blue color. --ar 2:3 -v5.1
3	Küçük Poni	Resimdeki kızın pembe bir elbise giydiği görülüyor. Elbisenin kolları kısa ve eteği diz hizasında. Kızın saçları sarı ve uzun. Kızın arkasında bir at var. Atın rengi kahverengi. Atın arkasında bir çiftlik evi görülüyor.	Girl's Outfit: The little girl in the picture is wearing a pink t-shirt and blue denim overalls. He has brown boots on his feet. Girl with blond and short hair. Horse Color: a brown horse. The horse's mane is black and its tail is brown. Farm: The farm in the picture is located outdoors and in a green area. There are some trees and a fence in the background. A little girl with short hair can be seen looking at the horse and the fence. --ar 1:1-v5.2
4	Kayıp Şeyler Ülkesinde	Resimdeki karakter, "Kayıp Şeyler Ülkesinde" adlı çocuk kitabının ana karakteri gibi görünüyor. Karakterin yüzü bize dönük ve arkasına hafif dönük bir şekilde durması, sanki bir şey arıyormuş gibi bir izlenim veriyor. Arka plandaki mavi gökyüzü ve yeşil orman, kitabın fantastik bir ortamda geçtiğini düşündürüyor.	Lost Things in the Picture: No clear information can be given about which lost things are found in the Land of Lost Things, depicted on the cover of the children's book in the picture. Lost objects are seen around. The images on the cover and the title of the book show that it is a story based on imagination and that various lost objects may take place in this story. The Child in the Lower Left Corner of the Picture: Appearance: The child in the lower left corner of the picture is depicted with his face turned towards us and his head slightly turned backwards. His hair is black and he wears a T-shirt with black and yellow stripes. Gender: boy It is seen that he is going down the stairs between the houses. Painting Technique: The cover design pictured appears to have been done using a traditional technique such as watercolor or charcoal. --ar 2:3 -v5.2
5	Kendini Beğenmiş Tekboynuz	Tam ortada, sarı saçlı bir erkek çocuk çimenler arasında uzanıyor. Arka planda ağaçlar var. Çocuk bir gergedan böceğine elini uzatıyor.	Blonde haired boy: The boy lies on the grass and reaches out to the rhinoceros beetle. Trees: There are trees in the background. Watercolor technique: The painting looks like it was made with watercolor technique. general evaluation The image looks like the cover of a children's book. The book appears to be about a blonde-haired boy's adventure with the rhinoceros beetle. The painting was made with watercolor technique and vibrant colors were used. --ar 1: -

			v5.2
6	Altın Kuş	Resimde, Grimm Kardeşler'in "Altın Kuş" masalının kapağı görülüyor. Kapaakta, altın tüyleri parıldayan bir kuşun yanında duran bir prens tasvir ediliyor. Prens arkasında, bir şato ve ağaçlar görülüyor. Kapak, pastel tonlarda ve yumuşak çizgilerle resmedilmiş.	The picture shows the cover of the Grimm Brothers' fairy tale "The Golden Bird". On the cover, a prince is depicted standing next to a bird with shining golden feathers. The crowned prince is wearing a green dress. A bird is flying right in the middle of the picture. He is extending his hand to the bird. The prince and the bird cover most of the picture. The cover is illustrated in pastel tones and soft lines. the prince has a crown. --ar 2:3, -v5.1
7	Balık	<p>Sol Üst Çeyrek: Beyaz gökyüzü ve mavi denizle gökyüzünün birleştiği nokta görülüyor. Denizde, hafif dalgaların etkisiyle suyun maviden açık yeşile geçişi görülüyor. Bu kısımda balık yok, sadece deniz ve gökyüzü tasvir edilmiştir.</p> <p>Sağ Üst Çeyrek: Beyaz bulutlarla hafifçe kaplı gökyüzü görülüyor. Güneş bulutların arasından ışınlarını gönderiyor. Bu kısımda da balık yok, sadece gökyüzü tasvir edilmiştir.</p> <p>Sol Alt Çeyrek: Denizde yüzen çeşitli balıklar görülüyor. Balıklar farklı renk ve boyutlarda tasvir edilmiştir. Denizdeki atıklar ve çöpler de bu kısımda net bir şekilde görülüyor. Bu kısımda denizdeki kirlilik problemine dikkat çekiliyor.</p> <p>Sağ Alt Çeyrek: Kürek çeken bir adam ve gri bir köpek tasvir edilen bir kayık görülüyor. Adam sarı bir elbise ve sarı bir şapka giyiyor. Adamın oltasında balık olduğunu gösteren bir işaret görülüyor. Bu kısımda insan ile doğa arasındaki ilişki ve balıkçılık faaliyeti tasvir ediliyor.</p>	Analyze this children's book visual. In one fourth of the book, there is a man and a dog fishing with his boat on the sea. There are fish in the sea, but there are wastes and garbage in the sea. The colors in the picture go from blue to light green in the sea. The sky is white, the man fishing has a yellow dress and a yellow hat. gray dog Items in the Image: Sea: The sea, which covers most of the image, is depicted with blue and light green coloring. These tones reflect the depth and calmness of the sea. Boat: There is a small boat floating on the sea. The kayak is brown wood color. Man: The man fishing in the boat, wearing a yellow dress and a yellow hat. The man's face is smiling and has an excited expression looking at the fishing rod. Dog: The dog standing next to the man is gray in color. The dog also seems to share the man's excitement and looks at the sea. Fish: There are various fish swimming in the sea. Fish come in different colors and sizes. Waste: Unfortunately, plastic bottles and other waste can also be seen in the sea. This situation reminds us of sea pollution. Use of Colors: The colors used in the image reflect the calmness of the sea and the characteristics of fishing. The use of yellow and blue colors is also striking. Yellow represents joy and continuity, while blue represents calmness and peace. General Comment: The visual provides an intriguing depiction of the beauty of fishing and the sea. At the same time, diverting attention to the problem of marine obstruction can contribute to reducing children's environmental awareness.--ar 1:1, -v5.1

8	Benim Küçük Kardeşim	<p>Karakterler Bebek: Pusetine yatıyor ve elinde bir oyuncak tutuyor. Kısa saçlı ve pembe bir elbise giymiş. Kız çocuğu: Bebeğin yanında oturuyor ve ona gülümsüyor. Uzun sarı saçları ve mavi bir elbise giymiş. Nesneler: Puset: Beyaz ve pembe renkte. Oyuncak: Bebeğin elinde tuttuğu mavi bir nesne. Renkler: Hakim renk: Beyaz. Diğer renkler: Pembe, mavi, sarı. Çizim tarzı: Yumuşak ve sade. Hatlar net ve belirgin. Renkler canlı ve pastel tonlarda.</p>	<p>The picture shows a baby lying in his stroller and a girl with short blonde hair playing with him. The background is white and the drawings are made in a soft and simple style. Elements: Characters: Baby: Lying in his stroller and holding a toy. She has short hair and wears a pink blouse and blue pants. Girl: Sitting next to the baby and smiling at him. Objects: Stroller: green colour. Toy: An object with yellow hair, a girl doll held in her hand. Colors: Predominant color: White. Other colors: Pink, blue, yellow.--ar 1:1 -v5.1</p>
9	Rafadan Tayfa: Hayrimatör	<p>Rafadan Tayfa'nın altı üyesi Hayri, Kamil, Akın, Sevim, Hale ve Mert kapakta görülüyor. Hepsi de filmin kahramanı olan Hayrimatör robotunun yanında poz veriyorlar. Hayri, filmin ana karakteri olduğu için diğerlerinden daha büyük bir şekilde tasvir edilmiştir.</p>	<p>The book cover depicts Hayrimator, Rafadan Tayfa's fourth movie. The six members of Rafadan Tayfa and the Hayrimator robot can be seen in the middle of the cover. The heroes pose in front of the Galata Tower and the skyline of Istanbul is behind them. Characters Six members of Rafadan Tayfa, Hayri, Kamil, Akın, Sevim, Hale and Mert, are seen on the cover. They all pose next to the Hayrimator robot, the hero of the movie. Since Hayri is the main character of the film, he is depicted in a larger way than the others. Background The background on the cover depicts Istanbul. Galata Tower, the most iconic symbols of the city, can be seen. This shows that the movie is set in Istanbul. Colors Vibrant and eye-catching colors are used on the cover. These colors show that the movie is an exciting and entertaining adventure movie.--ar 2:3 -v5.1</p>
10	Değişen Hava Değişen Mevsimler	<p>Görsel, yağmurdan sonra gökkuşağının ortaya çıktığı bir parkta oturan iki çocuğu tasvir etmektedir. Kız şemsiye tutarken, erkek gökkuşağına bakmaktadır. Bu sahne, mevsimlerin değişimi ve hava olaylarıyla ilgili bir çocuk kitabının kapağına uygun bir şekilde doğanın güzelliğini ve mucizesini yansıtmaktadır.</p>	<p>Analyze this book cover made with watercolor technique. There are two children sitting on the bench, one of them is a girl with an umbrella in her hand, she has blond hair and a pink blouse. The other child is a boy. He has blond hair, a white and red horizontal striped blouse and blue jeans. They look up. It's a rainbow after the rain. There are green trees like a park. --ar 1:1 -v5.2</p>
11	Temiz Kampçılar	<p>Dört çocuk, bir ağaçtan bir evin verandasını temizliyor. Renkler yumuşak ve pasteldir.</p>	<p>They are all girls Cleaning the veranda of the camping place they went to, four children are cleaning</p>

			the veranda of a house made of trees. Colors are soft and pastel. --ar 2:3 -v5.1
12	Uzun Bekleyiş	Resimde bir lunapark görülüyor. Lunaparkta dönme dolap, atlı karınca ve diğer eğlence parkı aletleri görülüyor. Arka planda gökyüzü ve ağaçlar da görülüyor.	Two boys take up most of the picture, there is an amusement park behind them, one is drinking juice, the other in a blue shirt is telling him something, the faces of the boys in white and red horizontal striped shirts are visible. A children's book made with watercolor.--ar 2:3 -v5.1
13	Yeşil Köpek	Çocuklar: Resimde iki erkek çocuk görülüyor. Her ikisi de şort ve tişört giymiş ve oltaları ile balık tutmaya çalışıyorlar. Köpek: Çocukların yanında, yeşil renkli bir köpek görülüyor. Köpek, suyun içinde yüzüyor ve yosunların arasında oynuyor gibi görünüyor. Balık: Resimde balık görülüyor. Ancak, çocuklar oltayla balık tutmaya çalıştıklarına göre, gölde balık olduğuna dair varsayımlarda bulunabiliriz. Göl: Resimde bir göl görülüyor. Gölün etrafı yeşil ağaçlarla çevrili. Su berrak ve sakin görünüyor. Güneş: Resimde güneş görülüyor. Güneş gökyüzünde yüksek bir konumda ve havanın güneşli olduğu anlaşılıyor.	Made with watercolor Plot: Two boys are fishing and there is a green dog in the water among the algae and greenery. Items in the Picture: Two boys: Both boys are wearing shorts and T-shirts. While one child is fishing with a fishing rod, the other is trying to get the rod out of the water. Green Dog: The dog swims in the water among algae and greenery. Fishing equipment: The image shows two fishing rods, a fishing hat and a bucket. Nature: The image shows a green grassy field, a blue pond and some trees.--ar 2:3
14	Hazine Avı	Çocuklar: İki çocuk, biri kız biri erkek. İkisi de mutlu bir şekilde gülümsüyor ve hazine haritasına bakıyorlar. Hazine haritası: Eski ve yıpranmış bir hazine haritası. Haritada bir adanın ve adanın üzerinde bir X işareti görülüyor. Deniz: Arkalarda mavi bir deniz görülüyor. Evler: Deniz kenarında birkaç ev görülüyor.	Two boys are looking at each other. Let it be done with watercolor In the image, two children, both looking happy, are seen holding a treasure map in their hands. In the background there is the sea and houses. Seen in the Picture Two children: Children, 10 They look older and cheerful. One of them has a treasure map in his hand and the other has a compass in his hand. Treasure map: A treasure map is a piece of paper with an X on it. The X appears to indicate where the treasure is buried. Compass: The compass is used to help children find the treasure. Sea: In the background, a seascape is visible. This suggests that the treasure may have been buried by the sea. Houses: A few houses can be seen by the sea. These houses probably belong to a village or town. Meaning of Things Seen in the Picture The picture appears to show children going on a treasure hunt. The treasure map and compass are

			tools to help them find the treasure. The seascape in the background suggests that the treasure may be buried by the sea. Houses can be where children live or where they search for treasure.--ar 2:3
15	Tarçın Nerede?	Görseldeki çocuklar, tarçın adında tavşanı aramaktadır. Tarçın, bir vazanın arkasına saklanmıştır. Çocuklar onu bulmaya çalışmaktadır.	Four children are looking for a brown and black striped rabbit named Cinnamon. In the image, a black and brown rabbit is hiding behind a vase. Children: There are four children, two girls and two boys. They are looking for a rabbit named Cinnamon. He is hiding behind a black and brown striped vase. Four children are looking for him anxiously. Rabbit: A black and brown striped rabbit is hidden behind a vase. The ground is brown, the background is light blue, it is made with watercolor.--ar 2:3
16	1 Numaralı Yarış Arabası	Resimde, kırmızı bir araba üzerinde oturan ve direksiyonu tutan bir çocuk görülüyor. Çocuğun yüzü net bir şekilde görünmüyor. Çocuk, mavi bir gömlek ve kot pantolon giymiş. Araba çimenli bir arazide ilerliyor. Arkan planda bir ev ve ağaçlar görülüyor.	The cover image shows a red homemade car, a green lawn and a blue sky. The racing car is depicted front and large, which emphasizes the main theme of the story. In the illustration, there is a child looking happy while driving a red handmade car. The boy is wearing a blue shirt and jeans and is sitting in the driver's seat of the car. The car is driving in a park or an open field and trees and green plants are seen around it. Detailed Analysis Child The child looks male. He has short brown hair and brown eyes. He looks smiling and happy. He's wearing a blue shirt and jeans. He is sitting in the driver's seat of the car. His hands are on the steering wheel. Car The car is red in color. It has four wheels and two doors. Headlights are on. Walking through a park or open field.--ar 2:3

17	Büyükannenin Düğme Kutusu	Resimde bir çocuk kitabının kapağı görülüyor. Kapakta bir büyükannenin düğme kutusunu tutan bir kız çocuğu tasviri var. Kız çocuğunun yüzünde heyecanlı bir ifade var. Düğme kutusunun içi renkli ve farklı boyutlarda düğmelerle dolu.	The girl is on the floor collecting the spilled things from the box. There is fabric and a sewing machine on the table. The wall is blue. He has a red bandana on his head and has brown hair. The cover image shows a girl opening a box full of buttons. The girl looks unhappy and worried. This gives clues about the content of the book. The cover is painted and drawn in vibrant colors. In the foreground is a girl holding a box full of buttons. The font on the cover is large and legible. The cover gives information about the content of the book. painted with watercolor. --ar 2:3 -
18	Sığırcığın Şarkısı	Ağaç: Ağaç, basit çizgilerle çizilmiş, gövdesi ve dalları olan bir ağaçtır. Dalları dalgalı bir şekilde çizilmiştir ve yaprakları basit daireler olarak gösterilmiştir. Sığırcık: Sığırcık, siyah renkte, gagası ve pençeleri sarı renkte bir kuştur. Kuş, yan profilden çizilmiştir ve başı hafifçe eğiktir. Kanatları gövdesine yakın durmaktadır.	A black starling and the branch of the tree cover a large area. There is a tree drawn on a plain kraft paper. A black starling sits on a branch of the tree. The bird's beak and claws are yellow. There is a white field in the background. Details of the elements in the picture: Tree: A tree is a tree with a trunk and branches drawn with simple lines. Its branches are drawn in a wavy pattern and its leaves are shown as simple circles. Starling: Starling is a black bird with a yellow beak and claws. The bird is drawn in side profile, with its head slightly tilted. Its wings remain close to its body. kraft paper: kraft paper, brown background--ar 2:3
19	Hop Güm!	Resim, basit ve renkli bir tarzda çizilmiş. Kuzgun, neşeli ve enerjik bir şekilde uçuyor gibi görünüyor. Kask ve gözlük, kuzgunun bir pilot olduğunu gösteriyor.	Here a white raven is flying happily and has a red helmet and glasses on his head. The background is forested but the color yellow dominates the background. Below the picture, there is a deer, bear and boar friends watching him with admiration.--ar 2:3

3. Findings

In the findings section, the original cover image of the children's books (A), the images obtained by using the data obtained from Gemini directly in Midjourney (B), the images obtained after the Prompt Generator and the prompt improved by the researcher (C), and the image decided by the researcher to be suitable as a book cover image (D) are included. After the prompt given to generate images on the Midjourney platform, the platform generated four low-resolution images for each prompt. For this reason, the images in columns B and C in Table II were shared in groups of four, but the image in column D was shared as a single image because it was the image chosen by the researcher.

Table 2. Details of the images produced.

Table 2.1. Images obtained for the book cover of "Küçük Prensi".

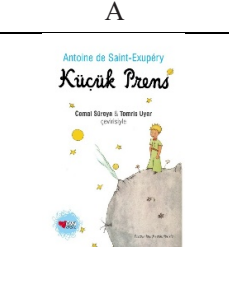
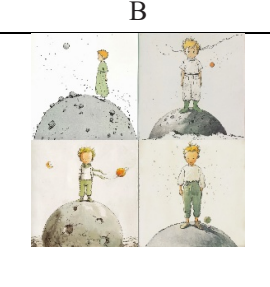


A	B	C	D
			

Table 2.2. Images obtained for the book cover of "Müge Her Şeyi Ölçüyor".

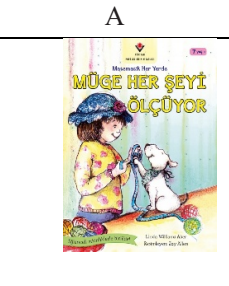


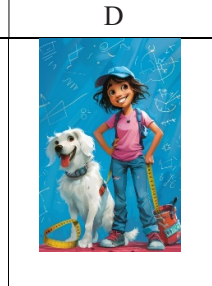
A	B	C	D
			

Table 2.3. Images obtained for the book cover of "Küçük Ponli".

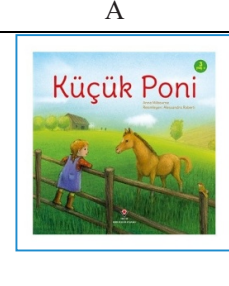
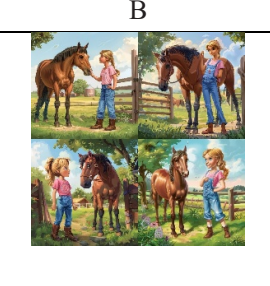


A	B	C	D
			

Table 2.4. Images obtained for the book cover of "Kayıp Seyler Ülkesinde".

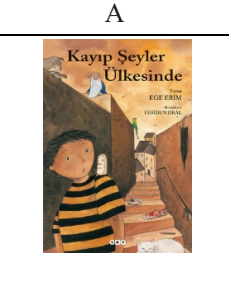
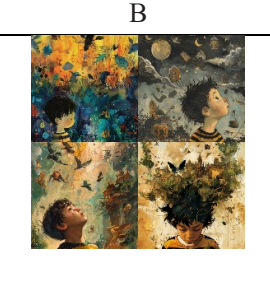
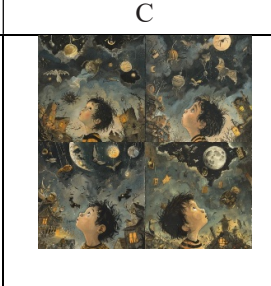

A	B	C	D
			

Table 2.5. Images obtained for the book cover of “Kendini Begenmiş Tek Boynuz”.





A	B	C	D
			

Table 2.6. Images obtained for the book cover of “Altın Kuş”.

A	B	C	D
			

Table 2.7. Images obtained for the book cover of “Balık”.





A	B	C	D
			

Table 2.8. Images obtained for the book cover of “Benim Küçük Kardeşim”.





A	B	C	D
			

Table 2.9. Images obtained for the book cover of “Hayrimator”.





A	B	C	D
			

Table 2.10. Images obtained for the book cover of “Degisen Hava Degisen Mevsimler”.

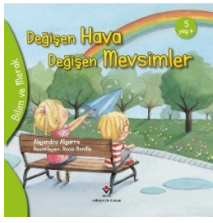



A	B	C	D
			

Table 2.11. Images obtained for the book cover of “Temiz Kampçılar”.





A	B	C	D
			

Table 2.12. Images obtained for the book cover of “Uzun Bekleyiş”.

A	B	C	D
			

Table 2.13. Images obtained for the book cover of “Yesil Kapak”.





A	B	C	D
			

Table 2.14. Images obtained for the book cover of “Hazine Avı”.





A	B	C	D
			

Table 2.15. Images obtained for the book cover of “Tarcin Nerede”.

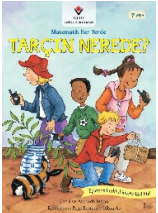



A	B	C	D
			

Table 2.16. Images obtained for the book cover of “1 Numaralı Yarıs Arabası”.

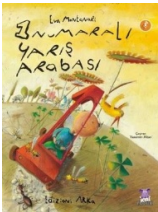

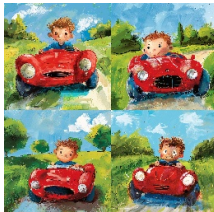
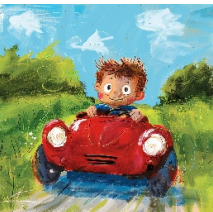
A	B	C	D
			

Table 2.17. Images obtained for the book cover of “Buyukannenin Dugme Kutusu”.





A	B	C	D
			

Table 2.18. Images obtained for the book cover of “Sıgırcığın Sarkisi”.





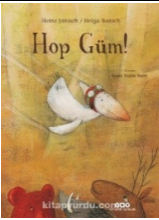



A	B	C	D
			

Table 2.19. Images obtained for the book cover of “Hop Gum”.

A	B	C	D
			

4. Conclusions

This study investigates how the combination of artificial intelligence (AI) and big language models (LMM) can be used to redesign the images used in children's book covers. With the development of artificial intelligence technologies, generative artificial intelligence (GAI) plays an important role in various applications. In particular, applications such as Midjourney, Dall-E and Leonardo AI stand out in generating visual content from text input. This study investigates how these technologies can be used for children's book covers.

The results show that Gemini and Midjourney AI tools can be used in the design of children's book covers and that these AI tools can be valuable tools in the design process of children's book covers. Especially when used in the design of children's book covers, Gemini's textual analysis capabilities can help identify visual elements that reflect the content of the book and attract children's attention. In this way, designers can use Gemini's textual analysis capabilities when redesigning the covers of children's books to create more attractive visuals. However, it is noteworthy that artificial intelligence tools are not yet developed enough to completely take over the design process. In this study, it is clear that the text output from Gemini needs to be edited and some improvements need to be made for the Midjourney platform. For this reason, it is thought that these tools can be considered as auxiliary tools for users, and considering the rate of development of technology, these and similar problems will find solutions in the near future.

Based on the results of this study, some suggestions can be made regarding the use of artificial intelligence technologies in the redesign of children's book covers. Firstly, more research needs to be conducted on the use of artificial intelligence tools. This research will help us to better understand how different AI models and

parameters can be used in the design of children's book covers. Secondly, AI models designed for children's books need to be further customised. Considering the unique style and target audience of children's books, it is important to further customise the AI models. This can help us produce more effective and attractive covers for children's books.

Finally, ethical issues related to the use of AI technologies need to be considered. It is important to ensure that the content children access through book covers is appropriate and ethical. Therefore, ethical guidelines for the use of AI technologies need to be identified and implemented. Consideration of all these suggestions may lead to a more effective use of artificial intelligence technologies in redesigning the visuals on the covers of children's books. This study provided a new perspective on how artificial intelligence technologies can be used in the field of children's literature and revealed important findings that can guide future studies.

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