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Development of Doratoon Animation Media on the Material of Faith in the Angels of Allah to Improve the Abillty to Memorize Daily Prayers

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ABSTRACT

Background. This research aims to create a Doratoon application-based learning media product to train children's understanding of faith in God's angels using the Doratoon application. This research uses a type of development research known as Research & Development (R&D

Purpose. The research process begins with a preliminary study to see the problems that occur, the potential for development.

Method. determining the literature review that is relevant to the problems that occur to plan the manufacture of initial product design, initial product field trials, product revision I, main field trials, product revision II.

Results. Operational field trials, final product revision and dissemination and implementation of product application.

Conclusion. The results of the research on the use of the Doratoon Application developed in this study with a series of steps and trial stages can be said to be successful in training children's understanding of faith in the angels of God because there is an increase in scores at each stage of the trial carried out.

KEYWORDS

Apps, Development, Doratoon

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INTRODUCTION

Learning is a process of adjusting one's attitude through social interaction communication and with the environment (Liao dkk., 2019). With this interaction communication, various kinds of learning processes take place. Learning is an interaction with students to help the teaching and learning process occur, so that the formation of a character and morals in students. Learning media is a tool to help channel messages during the implementation of the teaching and learning process, because the existence of various media in a lesson can make students easily

Learning media is a tool to help channel messages during the implementation of the teaching and learning process (Barredo Arrieta dkk., 2020), because the existence of various media in a

lesson can make students easily understand and accept what has been conveyed (Al-Ayyoub dkk., 2019). There are various kinds of learning media that can facilitate the teaching and learning process (Barredo Arrieta dkk., 2020), such as audiovisual (Zabini dkk., 2020), (Z. Liu dkk., 2022), human (K. Sun dkk., 2019), computer (Moriguchi dkk., 2020). Meanwhile (Cong & He, 2019), some students' learning activity efforts expect interesting learning media so that they are not saturated and boring (Cerezo dkk., 2019), one of which is audiovisual-based learning media (Abdar dkk., 2021).

The material of Faith in the Angels of Allah is material that explains the obligation of a Muslim to believe and believe that Allah SWT has created angels who are given the task of regulating the universe and certain other tasks (Buslaev dkk., 2020), this material is not enough to learn by listening to explanations only from educators (Gerup dkk., 2020), but it can also pump imagination skills in students by providing images or videos that are relevant to the subject matter of the material (Chao dkk., 2019). Interest (De Oliveira dkk., 2020).

OVERVIEW

Doratoon App

Nowadays learning demands to be more active (Tomeh dkk., 2019), innovative (Tiwari dkk., 2019), creative effective and fun (PAIKEM). It is also a method that can be used by educators in learning in order to attract students' thinking and foster interest and can facilitate the teaching and learning process that is carried out properly (Cavalcante dkk., 2019).

Some applications for making stories in audiovisual form are very much on Google and websites that support student learning in this digital era (Li dkk., 2019), with very varied advantages and focuses (Campanale dkk., 2020). This doratoon application (Köhler dkk., 2019), in its creation can include audio (Osco dkk., 2021), text and image-based content (Zhang & Ghorbani, 2020). And can combine still images (Buslaev dkk., 2020), audio recordings in accordance with the preferred way (Athar & Zaidi, 2020). However (Wang dkk., 2020), in creating a story it is necessary to combine text or audio files with images and give titles to stories (Gopinath & Nalajala, 2021). When the story or short film has become a video and has been completed (Lechien dkk., 2020), it can be uploaded to YouTube or shared with other people and other social media and students on their respective (Avancini dkk., 2021).

Learning that can foster or increase motivation in students is one way to use Doratoon Audiovisual Application learning. Doratoon is an audiovisual animation application created by Google that is free of charge (Du dkk., 2019). The animated video media as learning media has advantages and disadvantages (Zhonggen, 2019). The advantages of learning media using video include:

1.) Attracts attention for short periods from other external stimuli. 2.) Difficult demonstrations can be prepared and recorded in advance, so that during teaching the teacher can focus on the presentation and the students. 3.) Saves time and recordings can be played back many times. 4.) The loudness of the sound can be adjusted. 5.) Projection images can be dismissed for observation. 6.) Moving objects can be observed more closely. While the shortcomings that need to be considered in connection with the use of video media in learning activities are: 1.) Communication is one-way and needs to be balanced with the search for other forms of feedback. 2.) Less in showing the details of the material presented perfectly. 3.) Requires expensive and complex equipment (Arief S. Sadiman 2012).

In using Doratoon, it is also easy to only be asked to log into a Google account after that you can create video animations along with audio adapted to learning materials (Tang dkk., 2019). This

doratoon application presents interesting character animations and can modify the animation background with images that are made as creative as possible by doratoon application users (F. Sun dkk., 2019).

Doratoon is a website for creating animations for free that allows someone to create animated characters without having any previous basis (Zheng dkk., 2020). Doratoon can be used to create educational animation videos that attract students' learning motivation (Kim & Hall, 2019). Doratoon can be used in various ways (Jain dkk., 2019), it can also be used as an animation-based learning media to increase learning effectiveness (Mach dkk., 2019).

Animation-based learning media can be a means of delivering information that is friendly to students and can improve educators' information delivery skills so that the learning process becomes more (Benkhaya dkk., 2020). So it can be concluded that animated video is a learning tool with two media, namely audio media and visual media, which is packaged as creatively as possible to increase student motivation in understanding the initial material and creating conducive learning conditions. The purpose of learning media with Doratoon-based animation is to make learning activities more lively so that students are not (Bae dkk., 2019).

Faith in the Angels of Allah

The second pillar of faith is to believe in angels, in the Qur'an there are many verses that require every believer to believe in the existence of angels (J. Liu dkk., 2019). The word angel comes from the Arabic 'malak' which means messenger (Tomeh dkk., 2019), the plural form is 'malaikah'. Angels are believed to be heavenly creatures, created from light by Allah SWT. (Ahmad Daudy, *1997)*

- - Belief in the angels includes four things:

1. Believing in their existence.
2. Believing in those whose names we know and those whose names we do not know, we believe in them globally.
3. Believing in what we know of their attributes.
4. Believing in what we know of the duties they perform at the command of Allah, such as glorifying and glorifying Him day and night without getting tired or bored. (Al-Sofwa, 2000)

Among the properties or physical characteristics of angels as mentioned by the Prophet (saw), is that they are created from light: In a hadith narrated by Muslim. The hadith reads,

لَكُمْ وُصِفَ مِمَّا اٰدَمَ وَخُلِقَ نَارٍ مِنْ مَارِجٍ مِنْ الْجَانُّ وَخُلِقَ نُوْرٍ مِنْ الْمَلٰئِكَةُ خُلِقَتِ وَسَلَّم عَلَيْهِ اللهُ صَلَّ اللهِ رَسُوْلُ قَالَ قَالَتْ عَائِشَةَ عَنْ

(HR. Muslim:5314)

Meaning: " Angels were created from light and Jinn were created from a mixture of fire, and adam was created from earth." (HR. Muslim:5314)

The angels are adapted from sensuality, completely free from the desires of lust, and free from sinful and wrong actions. They are not like humans who like to eat, drink, be male or female. So they have a separate realm, standing in their own field, free according to their own nature, not affected by the characteristics that are usually applied to humans, for example, in relation to materialism (worldly material). They have the power to incarnate in human form or other forms that can be reached by taste and sight. (Sayid Sabid, 1974).

- - Among the attributes of angels are:

1. Angels were created by Allah from light (Nur).
2. Angels cannot be seen by humans even though they are in their midst.

3. Angels can form themselves in the form of beautiful human beings such as the angel who came to visit the Prophet Luthr, so that his people were deceived by him. In accordance with the words of Allah in Surah Hud/11: 77.
4. Angels have extraordinary powers with Allah's permission. Allah says in Surah Al-Najmi/53: 4-5.
5. Angels praise Allah day and night and never disobey Him. Allah says in Surah Al-Anbiya/21: 19-20.
6. Angels have no desires and therefore they do not eat, marry or have children. They do not sleep and do not have human characteristics, such as forgetfulness, laughter, complaining, disappointment and so on. Allah denounces the disbelievers who say that angels have wives. As Allah says in Surah Al-Zukhruf/43: 19.[9]
7. Angels always submit and obey completely to Allah's commands and do not violate the slightest prohibition in accordance with Allah's words in Surah An-Nahl / 6: 49-50.

- - The duties of angels include :

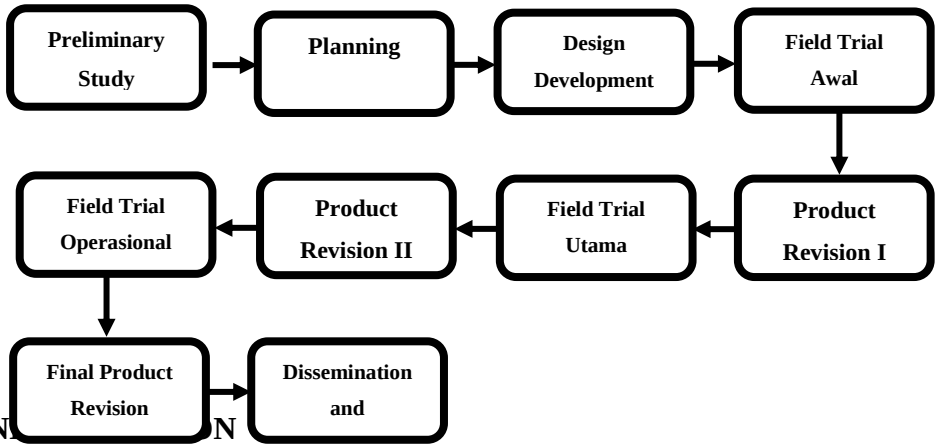
1. Jibril is in charge of conveying revelations received from Allah SWT to the Messengers. In the Qur'an Jibril is also referred to as Ruhul Amin or Ruhul Qudus, as mentioned in the words of Allah in Surah Ash-Shu'ara/26: 192-193 and Surah Al-Baqarah/2: 87.
2. Mikail is in charge of distributing sustenance to all creatures, such as food, drink, rain, heat. In the Qur'an this angel is called Mikail as in the word of Allah in Surah Al-Baqarah/2: 98.
3. Israfil is assigned by Allah to blow the trumpet on the Day of Judgment (Day of Judgment) to kill all creatures and also to resurrect all dead creatures, to be examined for good and bad deeds and this is what is called Al-Hisab. Allah says in Surah An-Naba'/78: 18.
4. Izrail is assigned by Allah to take the souls of human beings (take the lives of all creatures) with several assistants as mentioned in Allah's words in Surah As-Sajadah/32: 11 and Al-An'am/6: 61.
5. Munkar and Nakir, these two angels are in charge of asking questions to people who have just been buried.
6. Raqib and Atid, whose job is to record all the good and bad deeds of human beings.
7. Malik is the guardian of the hell of Jahanam. Malik is also called the angel of Zabaniyyah (Surah Al-Alaq/96: 17-18, Al-Muddasir/74: 27-30, and Zukhruf/43: 77).
8. Ridwan is the guardian of heaven (Surah Ar-Ra'd/13: 23-24)..

Those are the 10 names of angels and their respective duties that every believer must know and believe in. As for the other angels, it is not obligatory to know only enough to be believed and trusted. the word of Allah SWT in Surah Al-Baqarah verse 98. (Abdullah Zakiy Al-.p.108)

RESEARCH METHODOLOGY

Based on the research method, the researcher is a development research or Reseach and Development (R&D). The R&D research method is a method used to produce certain products where the products that researchers develop are based on doratoon applications or animated videos about Iman Kepada Malaikat-Maikat Allah in order to facilitate the process of teaching and learning (Sugiyono 2011: 333).

The steps in research and development according to can be described as follows.



RESULT AN N

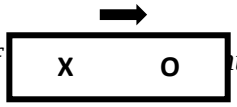
The problems that occur during the learning process take place students less respond to ongoing learning and learning that only uses the lecture method makes students feel bored and boring.

As for after finding the problems that occur, the researcher then conducts planning regarding the development of interesting Doratoon-based Audio Visual Animation media for students, doratoon-based animation media on the material of Faith in God's Angels in the subject of Islamic Religious Education (PAI) at Purwamekar Elementary School. As for the playback of this video, it can be accessed using a laptop and cellphone.

Development of Doratoon-based Animated Audio Visual Media on the material of Faith in the Angels of God in the subject of Islamic Religious Education (PAI) in Elementary School, Video display as shown below.

Initial Field Trial

Initial field trials were conducted in the home environment located in Gang Krajan 1 RT 09 RW 03 Tegalmunjul Village, Purwakarta District, totaling 12 people twice using a single one shot case study experimental design.

Figure 7: Research design of 

t One Shot Case Study

Description:
X : Treatment using the Doratoon app
O : Observation of results using the Doratoon app

Table 1. Initial Field Trial Results

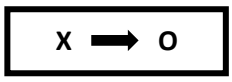
Activities	N	Average	Standar Deviasi	t- Count	df	t- Table
Test Run 1	12	30,83	1,58	67,34	11	1,78
Test Run 2	12	39,75	1,21	113,29	11	1,78

The results of the initial field trial analysis by referring to the table above show that the average value of field trial 2 is greater and has a difference with the value of field trial 1, namely 39.75>30.83 with a t-count of 113.29>67.34. The results of this analysis prove that the hypothesis

of training children's understanding of faith in the angels of God using the Doratoon application is proven effective through the initial field trial.

Main field trial

The main field trial was conducted at SDN Purwamekar with a total of 20 people twice using a single one shot case study experimental design. The use of the Doratoon application in training children's understanding of faith in the angels of God is declared effective if the value of trial 4 is greater than the value of trial 3.



Gambar 2. Desain Penelitian Eksperimen Single One Shot Case Study

Keterangan:

X : Treatment menggunakan aplikasi Doratoon

O : Observasi hasil menggunakan aplikasi Doratoon

Table 2. Main Field Trial Results

Activities	N	Average	Standard Deviation	t- Count	df	t- Table
Test Run 3	20	30,50	2,85	47,75	19	1,72

Test Run 4 20 39.60 2.43 72.68 19 1.72

The results of the main field trial analysis by referring to the table above show that the average value of test run 4 of 39.60 is greater than the average value of test run 3 of 30.50 with a t-count of 72.68 which is greater than 47.75. From the explanation of these results, it proves that the trial of the Doratoon application to train children's understanding of faith in the angels of God is said to be effective because there is an increase in the value of each trial from the two main field tests.

CONCLUSION

Based on the results of the analysis, it can be concluded that the Doratoon application developed in this study with a series of steps and trial stages can be said to be effective for training children's understanding of faith in the angels of God because there is an increase in grades in each trial conducted.

Doratoon Animation Audio Visual Media is an android-based application that can contain various kinds of learning that can train understanding, thus helping children or students to learn as well as practice it. This Doratoon application can be used as an alternative or variation of learning media that is fun for students as well as educators when delivering material about Faith in the angels of God which generally only uses traditional or monotonous learning media while this learning media can be used practically through laptops, cellphones or smartphones.

AUTHORS' CONTRIBUTION

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; In-vestigation.

Author 3: Data curation; Investigation.

REFERENCES

Abdar, M., Pourpanah, F., Hussain, S., Rezazadegan, D., Liu, L., Ghavamzadeh, M., Fieguth, P., Cao, X., Khosravi, A., Acharya, U. R., Makarenkov, V., & Nahavandi, S. (2021). A review of uncertainty quantification in deep learning: Techniques, applications and challenges. *Information Fusion*, *76*, 243–297. https://doi.org/10.1016/j.inffus.2021.05.008

Al-Ayyoub, M., Khamaiseh, A. A., Jararweh, Y., & Al-Kabi, M. N. (2019). A comprehensive survey of arabic sentiment analysis. *Information Processing & Management*, *56*(2), 320–342. https://doi.org/10.1016/j.ipm.2018.07.006

Athar, M., & Zaidi, S. (2020). A review of the feedstocks, catalysts, and intensification techniques for sustainable biodiesel production. *Journal of Environmental Chemical Engineering*, *8*(6), 104523. https://doi.org/10.1016/j.jece.2020.104523

Avancini, D. B., Rodrigues, J. J. P. C., Rabêlo, R. A. L., Das, A. K., Kozlov, S., & Solic, P. (2021). A new IoT-based smart energy meter for smart grids. *International Journal of Energy Research*, *45*(1), 189–202. https://doi.org/10.1002/er.5177

Bae, J., Kim, S. J., Kim, K. H., & Koo, D.-M. (2019). Affective value of game items: A mood management and selective exposure approach. *Internet Research*, *29*(2), 315–328. https://doi.org/10.1108/INTR-12-2017-0477

Barredo Arrieta, A., Díaz-Rodríguez, N., Del Ser, J., Bennetot, A., Tabik, S., Barbado, A., Garcia, S., Gil-Lopez, S., Molina, D., Benjamins, R., Chatila, R., & Herrera, F. (2020). Explainable Artificial Intelligence (XAI): Concepts, taxonomies, opportunities and challenges toward responsible AI. *Information Fusion*, *58*, 82–115. https://doi.org/10.1016/j.inffus.2019.12.012

Benkhaya, S., M' Rabet, S., & El Harfi, A. (2020). A review on classifications, recent synthesis and applications of textile dyes. *Inorganic Chemistry Communications*, *115*, 107891. https://doi.org/10.1016/j.inoche.2020.107891

Buslaev, A., Iglovikov, V. I., Khvedchenya, E., Parinov, A., Druzhinin, M., & Kalinin, A. A. (2020). Albumentations: Fast and Flexible Image Augmentations. *Information*, *11*(2), 125. https://doi.org/10.3390/info11020125

Campanale, Massarelli, Savino, Locaputo, & Uricchio. (2020). A Detailed Review Study on Potential Effects of Microplastics and Additives of Concern on Human Health. *International Journal of Environmental Research and Public Health*, *17*(4), 1212. https://doi.org/10.3390/ijerph17041212

Cavalcante, I. M., Frazzon, E. M., Forcellini, F. A., & Ivanov, D. (2019). A supervised machine learning approach to data-driven simulation of resilient supplier selection in digital manufacturing. *International Journal of Information Management*, *49*, 86–97. https://doi.org/10.1016/j.ijinfomgt.2019.03.004

Cerezo, R., Calderón, V., & Romero, C. (2019). A holographic mobile-based application for practicing pronunciation of basic English vocabulary for Spanish speaking children. *International Journal of Human-Computer Studies*, *124*, 13–25. https://doi.org/10.1016/j.ijhcs.2018.11.009

Chao, D., Zhou, W., Ye, C., Zhang, Q., Chen, Y., Gu, L., Davey, K., & Qiao, S. (2019). An Electrolytic Zn–MnO_2 Battery for High-Voltage and Scalable Energy Storage. *Angewandte Chemie International Edition*, *58*(23), 7823–7828. https://doi.org/10.1002/anie.201904174

Cong, L. W., & He, Z. (2019). Blockchain Disruption and Smart Contracts. *The Review of Financial Studies*, *32*(5), 1754–1797. https://doi.org/10.1093/rfs/hhz007

De Oliveira, D. M. P., Forde, B. M., Kidd, T. J., Harris, P. N. A., Schembri, M. A., Beatson, S. A., Paterson, D. L., & Walker, M. J. (2020). Antimicrobial Resistance in ESKAPE Pathogens. *Clinical Microbiology Reviews*, *33*(3), e00181-19. https://doi.org/10.1128/CMR.00181-19

Du, Z., Chen, X., Hu, W., Chuang, C., Xie, S., Hu, A., Yan, W., Kong, X., Wu, X., Ji, H., & Wan, L.-J. (2019). Cobalt in Nitrogen-Doped Graphene as Single-Atom Catalyst for High-Sulfur Content Lithium–Sulfur Batteries. *Journal of the American Chemical Society*, *141*(9), 3977–3985. https://doi.org/10.1021/jacs.8b12973

Gerup, J., Soerensen, C. B., & Dieckmann, P. (2020). Augmented reality and mixed reality for healthcare education beyond surgery: An integrative review. *International Journal of Medical Education*, *11*, 1–18. https://doi.org/10.5116/ijme.5e01.eb1a

Gopinath, C. S., & Nalajala, N. (2021). A scalable and thin film approach for solar hydrogen generation: A review on enhanced photocatalytic water splitting. *Journal of Materials Chemistry A*, *9*(3), 1353–1371. https://doi.org/10.1039/D0TA09619A

Jain, M., Singh, V., & Rani, A. (2019). A novel nature-inspired algorithm for optimization: Squirrel search algorithm. *Swarm and Evolutionary Computation*, *44*, 148–175. https://doi.org/10.1016/j.swevo.2018.02.013

Kim, M. J., & Hall, C. M. (2019). A hedonic motivation model in virtual reality tourism: Comparing visitors and non-visitors. *International Journal of Information Management*, *46*, 236–249. https://doi.org/10.1016/j.ijinfomgt.2018.11.016

Köhler, J., Geels, F. W., Kern, F., Markard, J., Onsongo, E., Wieczorek, A., Alkemade, F., Avelino, F., Bergek, A., Boons, F., Fünfschilling, L., Hess, D., Holtz, G., Hyysalo, S., Jenkins, K., Kivimaa, P., Martiskainen, M., McMeekin, A., Mühlemeier, M. S., … Wells, P. (2019). An agenda for sustainability transitions research: State of the art and future directions. *Environmental Innovation and Societal Transitions*, *31*, 1–32. https://doi.org/10.1016/j.eist.2019.01.004

Lechien, J. R., Chiesa-Estomba, C. M., Place, S., Van Laethem, Y., Cabaraux, P., Mat, Q., Huet, K., Plzak, J., Horoi, M., Hans, S., Rosaria Barillari, M., Cammaroto, G., Fakhry, N., Martiny, D., Ayad, T., Jouffe, L., Hopkins, C., Saussez, S., & COVID-19 Task Force of YO-IFOS. (2020). Clinical and epidemiological characteristics of 1420 European patients with mild-to-moderate coronavirus disease 2019. *Journal of Internal Medicine*, *288*(3), 335–344. https://doi.org/10.1111/joim.13089

Li, D., Deng, L., Bhooshan Gupta, B., Wang, H., & Choi, C. (2019). A novel CNN based security guaranteed image watermarking generation scenario for smart city applications. *Information Sciences*, *479*, 432–447. https://doi.org/10.1016/j.ins.2018.02.060

Liao, C., Li, Y., & Tjong, S. (2019). Bactericidal and Cytotoxic Properties of Silver Nanoparticles. *International Journal of Molecular Sciences*, *20*(2), 449. https://doi.org/10.3390/ijms20020449

Liu, J., Tang, C., Wu, H., Xu, Z., & Wang, L. (2019). An analytical calculation method of the load distribution and stiffness of an angular contact ball bearing. *Mechanism and Machine Theory*, *142*, 103597. https://doi.org/10.1016/j.mechmachtheory.2019.103597

Liu, Z., Mao, H., Wu, C.-Y., Feichtenhofer, C., Darrell, T., & Xie, S. (2022). A ConvNet for the 2020s. *2022 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 11966–11976. https://doi.org/10.1109/CVPR52688.2022.01167

Mach, F., Baigent, C., Catapano, A. L., Koskinas, K. C., Casula, M., Badimon, L., Chapman, M. J., De Backer, G. G., Delgado, V., Ference, B. A., Graham, I. M., Halliday, A., Landmesser, U., Mihaylova, B., Pedersen, T. R., Riccardi, G., Richter, D. J., Sabatine, M. S., Taskinen, M.-R., … Patel, R. S. (2019). 2019 ESC/EAS guidelines for the management of dyslipidaemias: Lipid modification to reduce cardiovascular risk. *Atherosclerosis*, *290*, 140–205. https://doi.org/10.1016/j.atherosclerosis.2019.08.014

Moriguchi, T., Harii, N., Goto, J., Harada, D., Sugawara, H., Takamino, J., Ueno, M., Sakata, H., Kondo, K., Myose, N., Nakao, A., Takeda, M., Haro, H., Inoue, O., Suzuki-Inoue, K., Kubokawa, K., Ogihara, S., Sasaki, T., Kinouchi, H., … Shimada, S. (2020). A first case of meningitis/encephalitis associated with SARS-Coronavirus-2. *International Journal of Infectious Diseases*, *94*, 55–58. https://doi.org/10.1016/j.ijid.2020.03.062

Osco, L. P., Marcato Junior, J., Marques Ramos, A. P., De Castro Jorge, L. A., Fatholahi, S. N., De Andrade Silva, J., Matsubara, E. T., Pistori, H., Gonçalves, W. N., & Li, J. (2021). A review on deep learning in UAV remote sensing. *International Journal of Applied Earth Observation and Geoinformation*, *102*, 102456. https://doi.org/10.1016/j.jag.2021.102456

Sun, F., Liu, J., Wu, J., Pei, C., Lin, X., Ou, W., & Jiang, P. (2019). BERT4Rec: Sequential Recommendation with Bidirectional Encoder Representations from Transformer. *Proceedings of the 28th ACM International Conference on Information and Knowledge Management*, 1441–1450. https://doi.org/10.1145/3357384.3357895

Sun, K., Xiao, B., Liu, D., & Wang, J. (2019). Deep High-Resolution Representation Learning for Human Pose Estimation. *2019 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 5686–5696. https://doi.org/10.1109/CVPR.2019.00584

Tang, Z., Liu, Y., He, M., & Bu, W. (2019). Chemodynamic Therapy: Tumour Microenvironment-Mediated Fenton and Fenton-like Reactions. *Angewandte Chemie International Edition*, *58*(4), 946–956. https://doi.org/10.1002/anie.201805664

Tiwari, S., Atluri, V., Kaushik, A., Yndart, A., & Nair, M. (2019). Alzheimer's disease: Pathogenesis, diagnostics, and therapeutics. *International Journal of Nanomedicine*, *Volume 14*, 5541–5554. https://doi.org/10.2147/IJN.S200490

Tomeh, M., Hadianamrei, R., & Zhao, X. (2019). A Review of Curcumin and Its Derivatives as Anticancer Agents. *International Journal of Molecular Sciences*, *20*(5), 1033. https://doi.org/10.3390/ijms20051033

Wang, C., Horby, P. W., Hayden, F. G., & Gao, G. F. (2020). A novel coronavirus outbreak of global health concern. *The Lancet*, *395*(10223), 470–473. https://doi.org/10.1016/S0140-6736(20)30185-9

Zabini, F., Albanese, L., Becheri, F. R., Gavazzi, G., Giganti, F., Giovanelli, F., Gronchi, G., Guazzini, A., Laurino, M., Li, Q., Marzi, T., Mastorci, F., Meneguzzo, F., Righi, S., & Viggiano, M. P. (2020). Comparative Study of the Restorative Effects of Forest and Urban Videos during COVID-19 Lockdown: Intrinsic and Benchmark Values. *International Journal of Environmental Research and Public Health*, *17*(21), 8011. https://doi.org/10.3390/ijerph17218011

Zhang, X., & Ghorbani, A. A. (2020). An overview of online fake news: Characterization, detection, and discussion. *Information Processing & Management*, *57*(2), 102025. https://doi.org/10.1016/j.ipm.2019.03.004

Zheng, J., Wittouck, S., Salvetti, E., Franz, C. M. A. P., Harris, H. M. B., Mattarelli, P., O'Toole, P. W., Pot, B., Vandamme, P., Walter, J., Watanabe, K., Wuyts, S., Felis, G. E., Gänzle, M. G., & Lebeer, S. (2020). A taxonomic note on the genus Lactobacillus: Description of 23 novel genera, emended description of the genus Lactobacillus Beijerinck 1901, and union of Lactobacillaceae and Leuconostocaceae. *International Journal of Systematic and Evolutionary Microbiology*, *70*(4), 2782–2858. https://doi.org/10.1099/ijsem.0.004107

Zhonggen, Y. (2019). A Meta-Analysis of Use of Serious Games in Education over a Decade. *International Journal of Computer Games Technology*, *2019*, 1–8. https://doi.org/10.1155/2019/4797032