

Performance Measurement of Animation Design Pre-Production Artist During COVID-19 Pandemic in India

Arghya Kamal Roy ^{a,1}, Abhishek Kumar ^a, B. Muthu Kumaran ^a, Sayyad Samee ^b,
Pranjal Singh ^c, K. Vengatesan ^d

^a*School of Computer Science and IT, JAIN (Deemed to Be University), Bangalore, India*

^b*Department of Electronics and Communication Engineering, SRM Institute of Science and Technology, Kattankulathur, India*

^c*Al Sadara. Al Ain, Abu Dhabi, AE, India*

^d*Department of Computer Engineering, Sanjivani College of Engineering, Kopergaon, MH, India*

Abstract. This research focuses on the development of the Indian animation industry. In Animation Pipeline pre-production is an important stage that determines the success of a film. Create and develop a story is the fast step and all other steps have to follow that storyline till final film realized. In this research paper present the survey base online questionnaire and the data has been collected of 300 artist who belong into Indian animation industry conducted in September 2020 by using google form. In general, Indian animation industry mostly run into production and post production (technical) base work so Indian animation industry has a smaller number of vacancies for pre-production (design and planning) artist and also having a very a smaller number of design and planning artist because of that they have highly demand. To evaluate and determine the factors that may affect the level of Indian animation pre-production industry. The study helpful to identify the animation industry current need and it focuses on planning stage to production of a movie. This research paper concludes 95% of artist working into the industry for production and post production if they are properly working into preproduction and then start into the movie work then there will be more vacancy for pre-production artist and end of the day production cost reduced up to 25 %.

Keywords. Physiological Learning, Animation, Pre-production, Indian animation industry, COVID-19, Performance Measurement

1. Introduction

In The time of 20th century media and entertainment industry take a vital role for human life style. The huge media and entertainment industry can't survive without animation, not only media and entertainment industry but also educational content, games, augmented reality, virtual reality all are very much depended on animation to full fill their goal. When it comes to animation there it's needs a proper planning for each and every frame and smallest element which is visible on screen, this proper

¹ Arghya Kamal Roy, School of Computer Science and IT, JAIN (Deemed to Be University), Bangalore

planning stage is call pre-production, and which department take care all this planning that department is call preproduction department, and which artist are belong in this pre-production department they are known as pre-production artist or pre-visualization artist.

In India has so many Oscar winning talent but it has really such a dearth of good quality content at home production. The Indian animation industry dominated by outsource project of television and film, which accounted that 85% of total animation project turnover in India only. Which outsource project come for Indian animation industry those are mainly for production and post production stage. So, each and every year Indian animation industry produced a lot of good quality animation project but those are not a home production content or those are not an IP (Intellectual Property) content of Indian animation industry, Indian animation industry just pushing there extremely talented artist as just their extended hand or as a technical artist to instant of money.

The Jungle Book is CGI (Computer Generated Imagery) film by Disney which awarded for best visual effect which created by only Indian animation industry so if Indian animation industry what to create a good detailed CGI (Computer Generated Imagery) movie or animation or live action instigated movie they can create in a very good manner. All the out-source project comes India after preproduction, only for production and post production so in outsource project has a smaller number of opportunities to participant for pre-production artist or pre-visualization artist.

On afraid of coronavirus Indian government announced lockdown that mean no public transport no office will run, everything will be stop to avoid spading of coronavirus, so in this time how animation industry can run smoothly or how animation industry can run as work from home. In the beginning of coronavirus crisis all animation industry was closed but animation industry use for entertainment and entertainment help human society to stay home and bring closer of a family member and also make happy and smiley and its helps to relive tension, mainly animation industry help to grow economy of country so animation studio cannot close for long time. Also, animation industry creates education content everything can be stop but education should not stop so animation industry has to run in as usual in won speed.

2. Research Methodology

In this pandemic situation of Covid-19 it's very difficult and dangerous to meet people personally for doing survey and gathering importance knowledge. So, keep in mind that covid-19 situation this research paper collects information by using virtual meeting and use of google form. This research paper is mainly depending on questioner base survey report of many artist who belong in Indian animation industry from several company and several place of country. This research paper also gone through many online portals such as website, geranial, block, article, previous research paper, Wikipedia to collect the valuable data about the current situation of Indian animation industry and its actual need for shining up in front of the world.

This research paper collects 306 artist's response, those artists represent from different variety of demographic profiles and several company's different departmental

work experience perspective. A holistic and pluralistic view has been provided by pre-production production and post production artist. This questioner consists two section, one work experience of artist and other is work experience of that studio where he or she work. This questioner may require approximate 5 to 10 minutes to complete an artist.

3. Result and Analysis

The To evaluate and determine the factors that may affect on tradition which is going on in Indian animation industry in the time of 20th century. In this time Indian animation studios are waiting for outsource project of production and post production level base work, because of that pre-production artist has very smaller number of opportunities to survive or get into in Indian animation studio.

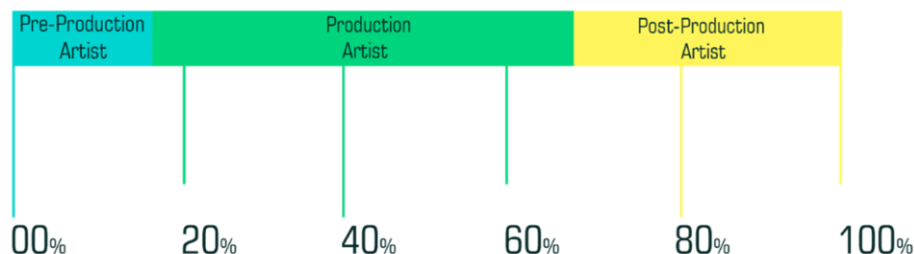


Figure 1. Different departmental number of artists

If the biggest Indian animation industry are also looking for outsource project as pre-production stage or pre-visualization stage then many artists who are interesting in creating IP (intellectual property) content they will get more opportunity to get into in Indian animation society.

The study will also helpful to identify the current situation of home production in Indian animation industry and its demands and needs. Yet you will almost not able to find a single number of original Indian home production animated movie which are highly visible or commercial hits or its really won national and international award, it's extremely stunning why it's happened, when parallelly this Indian animation society works for outsource project those are huge successfully growing all over the world.

This research paper will also try to look into how Indian animation industry, mainly pre-production industry survives in coronavirus pandemic situation. In the time of coronavirus how pre-production artist manage to do their duty, have any changes on there working process, are they getting any extra opportunities or threats because of this lockdown situation. Is this lockdown situation becoming golden time or tuff time for an artist this is main moto off this research? This questioner serves received overall 306 artists, in these 306 artists 33% are female artist and 77% are male artist that's mean in Indian animation industry mostly male artist presentence is more (from Figure 2). In these 306 artists 8.82% are pre-production artist, 67.32% are production artist, 23.85% are post-production artist that's mean in Indian animation industry has a greater number of production artist and then post-production artist then pre-production artist (from Figure 3). In that 306 artists 50% are 0 - 5 years' experience artist (fresher), 33.3% are 5 - 10 years' experience artist (mid), 16.66% are 10 - 15 years' experience

artist (senior) that means in Indian animation industry has a greater number of fresher artist and then mid artist and then senior artist (from Figure 4). In this questioner 36 studio record has been collected, in this data 25% studio are work for pre-production work and 75% studio are work for production and post-production work that mean most of the studio work for production and post-production work (from Figure 5). The main data of this questioner is in 306 artist 80.71% artist faced advantage and 19.28% faced disadvantage due to coronavirus lockdown work from home situation (from Figure 6).

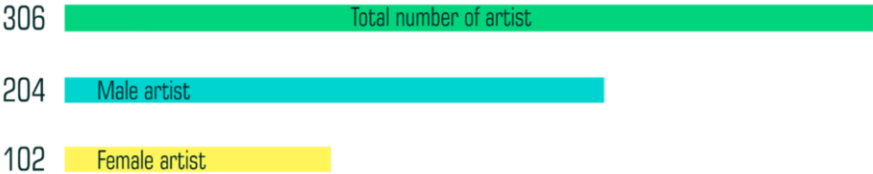


Figure 2. Male artist and female artist number of total questioners

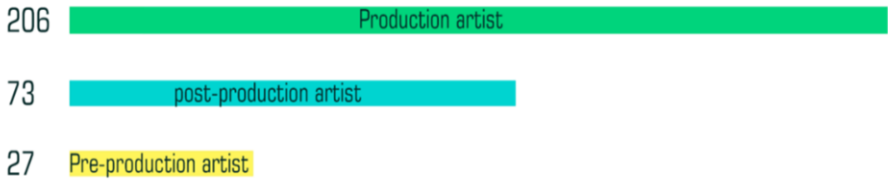


Figure 3. Artist who response in questioner their work section

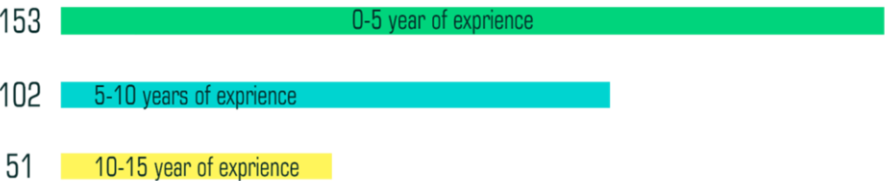


Figure 4. Experiences of artist who response in questioner

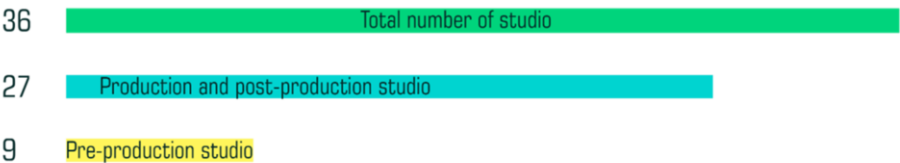


Figure 5. Artist who response in questioner their total studio and which section they work for animation film production

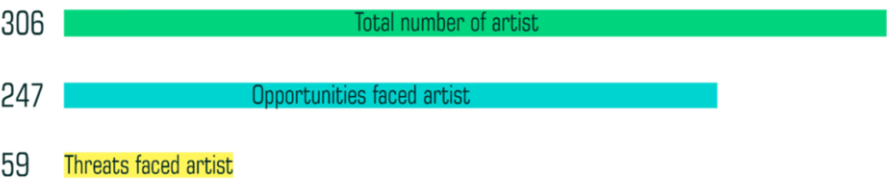


Figure 6. Different section artist questioner graph who face opportunities or threat due to 2020 (covid-19 lockdown)

In general, Indian animation industry has two face, one is production and post production work for international project those are high detail good quality work which are box office hits and also achieve a lot of international award, other one is domestic IP (intellectual property) oriented content project which are not very much good quality work and as well as not so much box office hits.

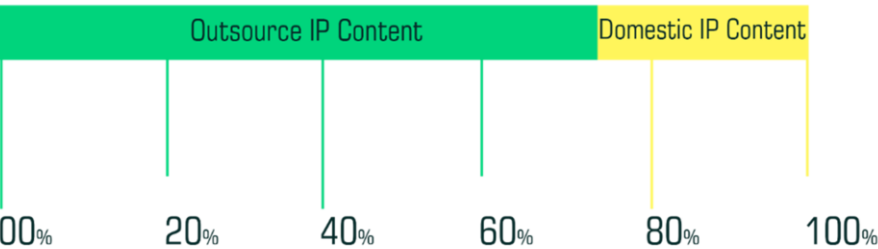


Figure 7. Indian animation studio work participant graph

Skyfall, how to train your dragon, Shrek those are international box office hit animation film those came in Indian animation industry as an outsource project but those are growing in a huge success and many international awards but Road side Romeo a Indian IP (intellectual property) content animation film this is not huge success in box office when both works has done by the same Indian animation industry. Indian animation industry mainly focus in production and post production work of outsource project because of that last few years Indian animation industry pursuing a huge growth in production and post production section, and also mainly being dependent of outsource project industry is not focusing on create domestic IP oriented content, so if not focusing on creation of domestic IP oriented content then don't need the pre-production team who mainly focus on planning stage and also pre visualization of a project.

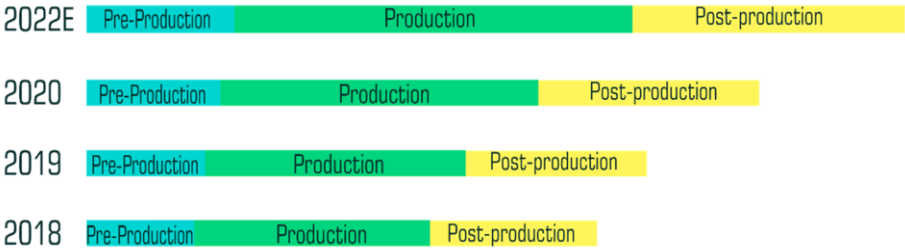


Figure 8. Overall animation studio graph since few year

The Indian animation industry mainly run under control of business people they want to made animation film with in half time and a quarter of the budged, but they expect as the same profit of Pixar or Disney film. A Disney or Pixar film take exactly three years while a Indian animation film hardly takes one year to one and half year. Within this three-year Disney or Pixar film spend almost one and half year for research, development and pre-production work and rest one and half year mainly concentrate on production, postproduction, marketing and publishing.

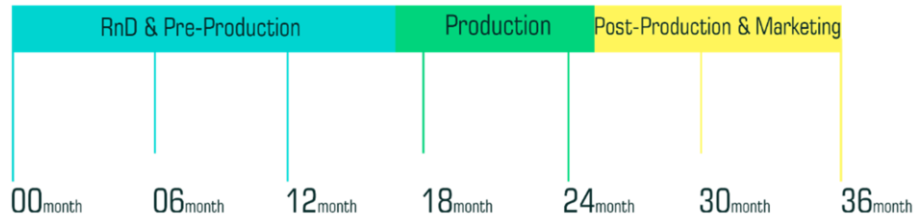


Figure 9. Time division of Disney, Pixar full length movie creating

In an Indian animation film pipeline, they maximum two to three month for preproduction work and less of the time concentrate for production and post production.

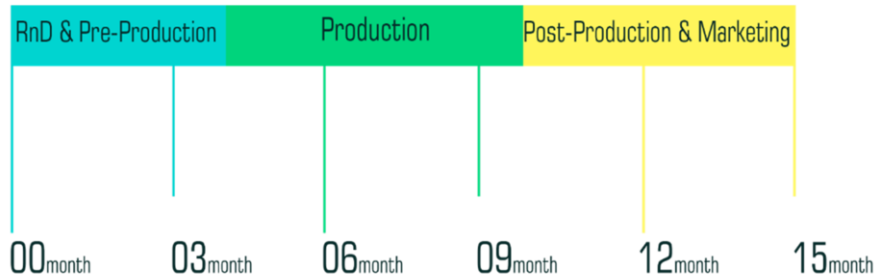


Figure 10. Time division of Indian full-length movie creating

Indian animation industry relatively needs to spend more time and more money because lack of concentration and focus on pre-production such as planning stage and pre-visualization stage. Indian animation movie also not able to shining in box office because of lacking in R & D (research and development) while Disney and Pixar studio use to do R & D a lot before a project start even, they use to reach to the child to show their design and small planning video to collect their reaction after doing that much research they get into a project finally. In outsource project in a hole day may artist have to maximum one or two second of animation some time less than that but in Indian project they have to complete six to eight second event some time client demand more than that, this timing issue became a big barrier for artist to create good quality detail output work in the case of Indian domestic production, also production and post production artist can speed up there working process if they get proper planning output as a reference.

In the fast stage of coronavirus crisis animation industry was slow down but that doesn't mean it had affected deeply, and then slowly it adapted this situation while they went to work from home condition. In this lockdown time majorly that project is going on which production are already funded. In that pandemic time studio utilize the

advantage that people don't need to share physical space to progress the project and studio also learned that how can be done much of the work even more work from home.

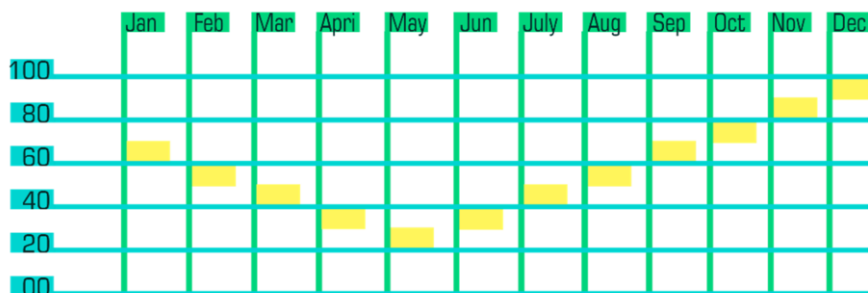


Figure 11. Overall animation studio graph at 2020 (Covid-19)

Some mid or large studio declared that 10 to 30 % of their productivity of technical and management got reduce due to lockdown situation because telework is not able to work always as effective for all type of workflow, some operation not going to control by remotely. Revision process and information flow got slow down due to increasing physical distance like group review takes longer time for a creative director to gives feedback and notes for every artist's work. In this situation to keep work flow as same speed studio had to board new member or supervisor so studio may have to spend some extra salary but parallely some vacancy got increase.

Many actors are involving in animation film production pipeline those are also called mix media film or VFX film, in this lockdown all the shoot had to be postpone because of that so many studios suffered for this delayed of outsource captured raw footage file. Many studios directly miss opportunities or huge financials loss due to residual or postpones even cancelled the shoot of some project. In this situation launching a new project is more complicated but developing new project is less affected specially when international partners are involved. The studio who are work to develop project they are now worry about they will not get much work in future on that time there may have some certain chance to lose the job of production and preproduction artist for temporary time periods.

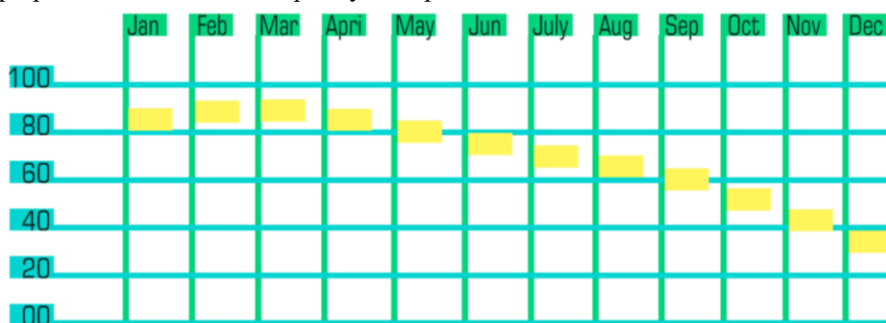


Figure 12. Production studio graph at 2020 (Covid-19)

Due to lock down many film festivals has postponed or close because of that many business and marketing opportunities generally get reduced. An animation films need

more time than a life action film so now animation developing studio are not facing any financial crises but, in the future, they have to suffer to pay all bills and expenses. But the only hope is the animation industry is growing very fast and also creating new job portal because of virtual landscape whose demand are so high now a days so thanks to their adaption ingenuity which really helps to being start layoffs.

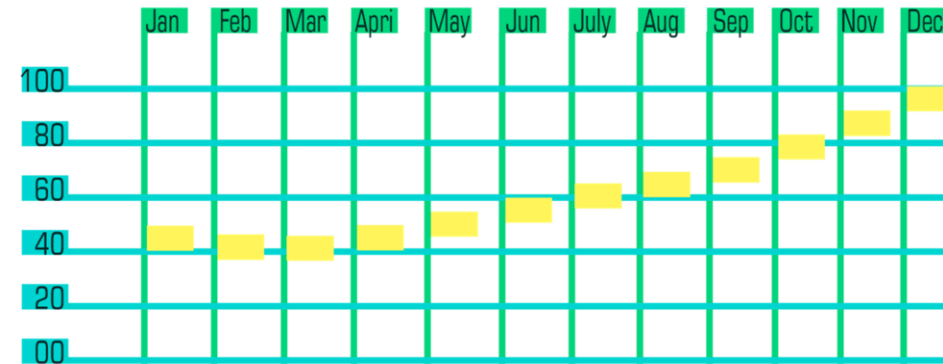


Figure 13. Developing studio graph at 2020 (Covid-19)

Unreal engine and unity are the two advance technology which help film making company to full fill their ambition of film making project due to coronavirus lockdown situation. No green screen will be required for movie production shooting par pass that will be ensure that by using of advance technology by this two-game development asset. These two new technologies have been taken new levels of creating and watching experiences by use of 3D readymade environment. This virtual landscape gaming technology already been use for two top successful move such as The Lion King and The Black Panther. By using this technique all shooting is continue due to lockdown situation because this work pipeline process can be control by remotely don't need much physically present of artist.

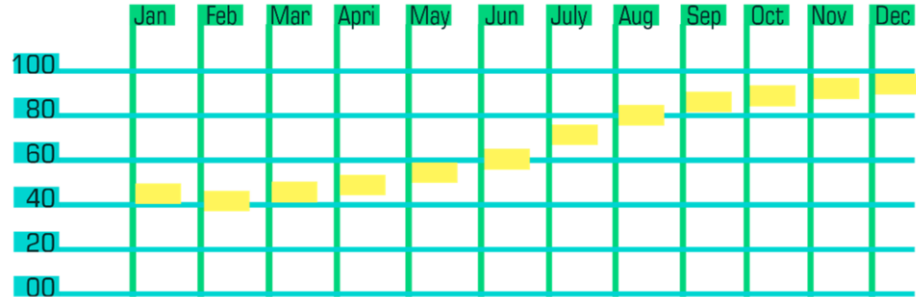


Figure 14. Kid content subscriber graph in OTT platform at 2020 (Covid-19)

The best thing of using virtual readymade landscape background is readymade background will be provided by game development company and the production people directly work on whole screen lighting adjustment in the shooting time only and actors need to act only while in traditional film screen has to shoot on the screen scene

and then background has to remove and place new background, tracking, light adjustment. This new technology of shoot and background placing is also help to reduce the production cost and production time while shooting is going on.

Due to lockdown for coronaviruses pandemic situation OTT (over the top) platforms subscriber number got increase. The broadcast Audience research council says that due to covid-19 consumption growth happened 39% in children content and also OTT platform Zee5 kids achieves 200% viewer ship growth other such as VOOT achieves 700% viewer ship growth. When the released content viewer ship growth is happened in lockdown time so new content has to release in market mean while pre-production production post-production work should be on track.

4. Conclusion and Future discussion

This research paper concludes many of artist's experience and there thought and knowledge who belong in Indian animation industry in several department as story boarding, lighting and rendering, modelling and texturing, animation and character design etc. This big Indian animation society should start creating there domestic IP content as a Pixar or Disney pipeline where will be main focus on pre-production work then only production and post production work will be smoother and faster, it will also save some production cost in normal view it may increases the production cost but a good quality animation film will come which can double the profit at end of the day.

Pre-production who mainly very good at drawing they are pending their free time on creating Comic Books and Graphic Nobel digitally as well as traditional medium. By saving traveling time and energy they could also create their own IP content such as character design, illustration, concept art, background drawing, story, storyboard, asset design and those could be selling on many online portals such as shutter stacks, adobe stacks etc. As an artist their main achievement is peach of mind and happiness that can be achieve only through create their master pies art work which they create from there mind and also where will be no creative director, no team lead, no correction no, even no feedback what they want to create they can create, only this pandemic situation pre-production artists are getting their peace of mind.

In this Covid-19 pandemic situation new animation film project may not go to be lunched so pre-production artist have less work but animation pre-production artist is also connected many other industries such as gaming industry, education industry and virtual readymade landscape background creating industry, those industry has huge growth in this time. So, pre-production artist gets some new experience to work in different field project, also increase more scope for pre-production artist as well as production and post-production artist.

References

- [1] S. Sharma and D. Verma, "Impact of COVID-19 and Nine-Minute Call on Indian Power Sector. Study of Blackout Prevention," 2020 International Conference on Technology and Policy in Energy and Electric Power (ICT-PEP), Bandung, Indonesia, 2020, pp. 301-305.
- [2] M. Tropea and F. De Rango, "COVID-19 in Italy. current state, impact and ICT-based solutions," in IET Smart Cities, vol. 2, no. 2, pp. 74-81, 7 2020.

- [3] Q. Pham, D. C. Nguyen, T. Huynh-The, W. Hwang and P. N. Pathirana, "Artificial Intelligence (AI) and Big Data for Coronavirus (COVID-19) Pandemic. A Survey on the State-of-the-Arts," in *IEEE Access*, vol. 8, pp. 130820-130839, 2020.
- [4] M. N. Islam and A. K. M. N. Islam, "A Systematic Review of the Digital Interventions for Figurehting COVID-19. The Bangladesh Perspective," in *IEEE Access*, vol. 8, pp. 114078114087, 2020.
- [5] Potharaju, S. P., & Sreedevi, M. (2018). A novel cluster of quarter feature selection based on symmetrical uncertainty. *Gazi University Journal of Science*, 31(2), 456-470.
- [6] D. D. N. Benty et al., "Use of Information and Communication Technology in Learning in the Covid-19 Pandemic Period to Improve Student Learning Outcomes," 2020 6th International Conference on Education and Technology (ICET), Malang, 2020, pp. 165-169.
- [7] A. K. Bairagi et al., "Controlling the Outbreak of COVID-19. A Noncooperative Game Perspective," in *IEEE Access*, vol. 8, pp. 215570-215581, 2020.
- [8] M. Pokorný, "Experience with e-learning in Teaching Combinatorics and Data Processing," 2020 43rd International Convention on Information, Communication and Electronic Technology (MIPRO), Opatija, Croatia, 2020, pp. 838-842.
- [9] G. Molnár and D. Sik, "The virtual toolkit of digital instruction and its application in digital work forms," 2020 11th IEEE International Conference on Cognitive Infocommunications (CogInfoCom), Mariehamn, Finland, 2020, pp. 000597-000600.
- [10] M. Pokorný, "Experience with e-learning in Teaching Combinatorics and Data Processing," 2020 43rd International Convention on Information, Communication and Electronic Technology (MIPRO), Opatija, Croatia, 2020, pp. 838-842.