The concept of intelligent gamification, virtual reality & artificial intelligence (AI) to face the pandemic in education

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Abstract
When facing a pandemic, education experienced a considerable surprise, where many things made us not expect this to happen. This results in several problems, such as educational institutions needing more time to be ready when facing the cessation of the teaching and learning process, information technology infrastructure suddenly being used to its maximum capacity, and human resources, which in some educational institutions may not be ready. In this research, we will use innovation profiling to implement pandemic learning systems in 2024. If it happens again, this framework will help us see the big picture when dealing with a pandemic. This research results from the 2024 pandemic learning systems framework, in which stages for overcoming the pandemic significantly influence the teaching and learning process in education. Therefore, we need to increase our readiness to face all of this. It is essential to do so that the teaching and learning process will continue to run well and by the learning outcomes set by each institution.

Keywords: *Education, Pandemic, Learning systems, Gamification, AI, Virtual reality.*

Abstrak
Pendidikan pada saat menghadapi pandemic mengalami sebuah kejutan yang sangat besar, dimana banyak hal yang membuat dari kita tidak menyangka bahwa hal tersebut akan terjadi. Hal ini mengakibatkan beberapa masalah seperti tidak siapnya institusi pendidikan pada saat menghadapi terhentinya proses belajar mengajar, infrastruktur teknologi informasi yang tiba-tiba digunakan secara maksimum dan sumber daya manusia yang mungkin di beberapa institusi pendidikan belum siap. Pada penelitian ini, kami akan menggunakan metode innovation profiling untuk menerapkan pandemic learning systems 2024. Dimana, framework ini akan dapat membantu kita untuk memiliki gambaran besar dalam menghadapi pandemic, jika hal itu terjadi lagi. Hasil dari penelitian ini adalah framework pandemic learning systems 2024, yang dimana terdapat tahapan untuk mengatasi pandemic yang memberikan pengaruh signifikan terhadap proses belajar mengajar dalam pendidikan. Oleh karena itu, di sini kita perlu meningkatkan kesiapan dalam menghadapi semua ini dan hal ini sangat penting untuk dilakukan sehingga proses belajar mengajar akan tetap berjalan secara baik dan sesuai dengan capaian pembelajaran yang telah ditetapkan oleh setiap institusi

Kata kunci: *Pendidikan, Pandemi, Sistem pembelajaran, Gamification, AI, Virtual reality.*

1. INTRODUCTION

Significant changes started when we experienced the 2020 pandemic; this was shock therapy given to us, especially all educational institutions. It is as if we are facing a temporary apocalypse because everyone must stay home and keep their distance, and schools are closed indefinitely. Almost two years; some even need more than two years of adjustments in the teaching and learning process within the institution. Some are ready, some are still preparing, and some are not ready to face all this. But here, with the pandemic, we will all be more advanced

than before because every incident will teach many positive things to any organization. Problems do not make us weak but show who we are, and if we learn from the problem, and vice versa, if we never know from the problem.

This research will focus on providing solutions to educational institutions everywhere. It is not because we understand better or are better than others, but here, we want to share our concepts so that this might become an insight that might be developed in the future. You can read the book we have published for more details because, in this research, we will only provide a big picture of the concept. For details, you have to read the book to get complete information. You can visit the websites: The Concept Of AI Ethics And Innovation Profiling, https://a.co/d/gCmNUzn[1], The Combination Of Gamification, Board Game, & Metaverse-AI, https://a.co/d/fv2GExh[2], We Are What We Choose: Smart Startup Business Model, The Seven Stages of Smart Startup Profiling, https://a.co/d/ar7yYUk[3], The Concept Of Techno Family & Virtual Reality: The Maturity Level of Techno Family, Virtual Reality, Culture, New Normal University, The Maturity Level of University Profiling, https://a.co/d/3CyneVh[4]. These books will provide insight, ideas, and several case study examples that might apply to your educational institution. This is not a promotion but about knowledge, information, ideas, innovation, and case study examples; we all must learn from any information to grow significantly and face globalization competition.

Furthermore, this research will produce several vital stages, namely, a concept about dealing with a pandemic using gamification, AI, and virtual reality. These three technologies will be used to overcome this, and of course, you will get a very detailed explanation only in the book. Next, we will all find that problems within educational institutions will become significant obstacles if they still need to be resolved immediately. Finally, we will provide several recommendations or stages and ways to implement the 2024 pandemic learning systems flexibly in our respective educational institutions.

2. RESEARCH METHODOLOGIES

Figure 1 explains the stages in the 2024 pandemic learning systems research. In the first stage, we identified the problem and then determined our method. We will not define our method because it would take too long. This method is in the book we wrote; you can read it in the book we published on Amazon. In the second stage, we started designing and creating a pandemic learning systems framework for 2024, where this framework will be beneficial in becoming a unique guide for the world of education, especially in dealing with the pandemic. Once again, we emphasize that this concept can be developed flexibly. In the final stage, we will explain the application of gamification, AI, and virtual reality to the education system to deal with the pandemic so that if this happens again, educational institutions can face it. We also surveyed 100 participants, consisting of lecturers and students, including: (1) Has the pandemic had a significant impact on the teaching and learning process? a. Yes, b. No, c. Does not have much effect on the teaching and learning process, d. It provides a significant impact but can still be overcome by studying online, e. It was very impactful and made it difficult for us to
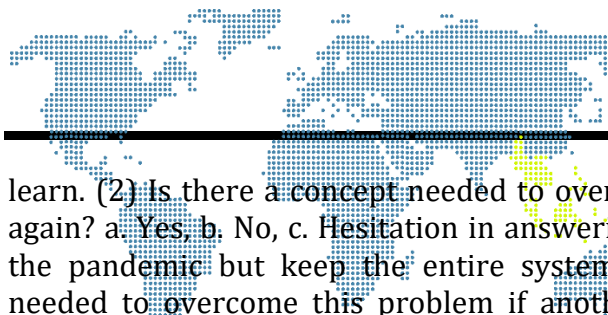
learn. (2) Is there a concept needed to overcome the next pandemic if it happens again? a. Yes, b. No, c. Hesitation in answering, d. We need a concept to overcome the pandemic but keep the entire system running. e. Exceptional guidance is needed to overcome this problem if another pandemic occurs. (3) Are reliable human resources needed to overcome the pandemic? a. Yes, b. No, c. Hesitation in answering, d. It is needed but takes time to develop this, e. It is really needed and must be carried out and implemented immediately


Figure 1. The process of research

3. RESULTS & DISCUSSION
3.1. Survey-Results

(1) Has the pandemic significantly impacted the teaching and learning process? a. Yes (1), b. No (2), c. Does not have much impact on the teaching and learning process (10), d. It provides a significant impact but can still be overcome by studying online (20), e. It was very impactful and made learning difficult for us (67). (2) Is there a concept needed to overcome the next pandemic if it happens again? a. Yes (2), b. No (4), c. Hesitation in answering (10), d. We need a concept to overcome the pandemic but keep the entire system running (23). e. Exceptional guidance is needed to overcome this problem if another pandemic occurs (61). (3) Are reliable human resources needed to overcome the pandemic? a. Yes (2), b. No (3), c. Hesitation in answering (12), d. It is needed but takes time to develop this (25), e. It is really needed and must be carried out and implemented immediately (58)

3.2. Framework Pandemic Learning Systems 2024

Figure 2 explains that we all knew that our education system initially had a face-to-face learning process. Where students go to class and take part in the learning process in class, and when finished, students can return to their respective homes, or in the afternoon, they can take part in other extra-curricular
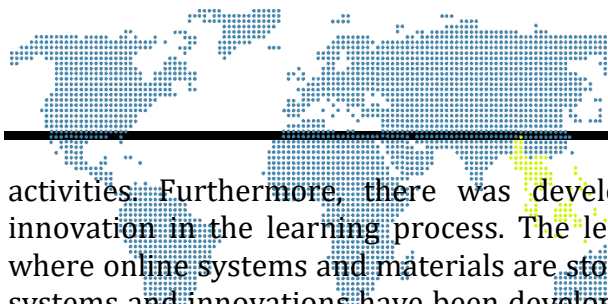
activities. Furthermore, there was development at the initial stage, namely innovation in the learning process. The learning process has begun to develop, where online systems and materials are stored online. The next stage is where old systems and innovations have been developed, so this stage will be upgraded to a higher level, namely by implementing gamification, AI, and VR. The final stage is to bring everything together to create a new education system, and this is targeted; if done consistently, it will take around five to ten years to be implemented.
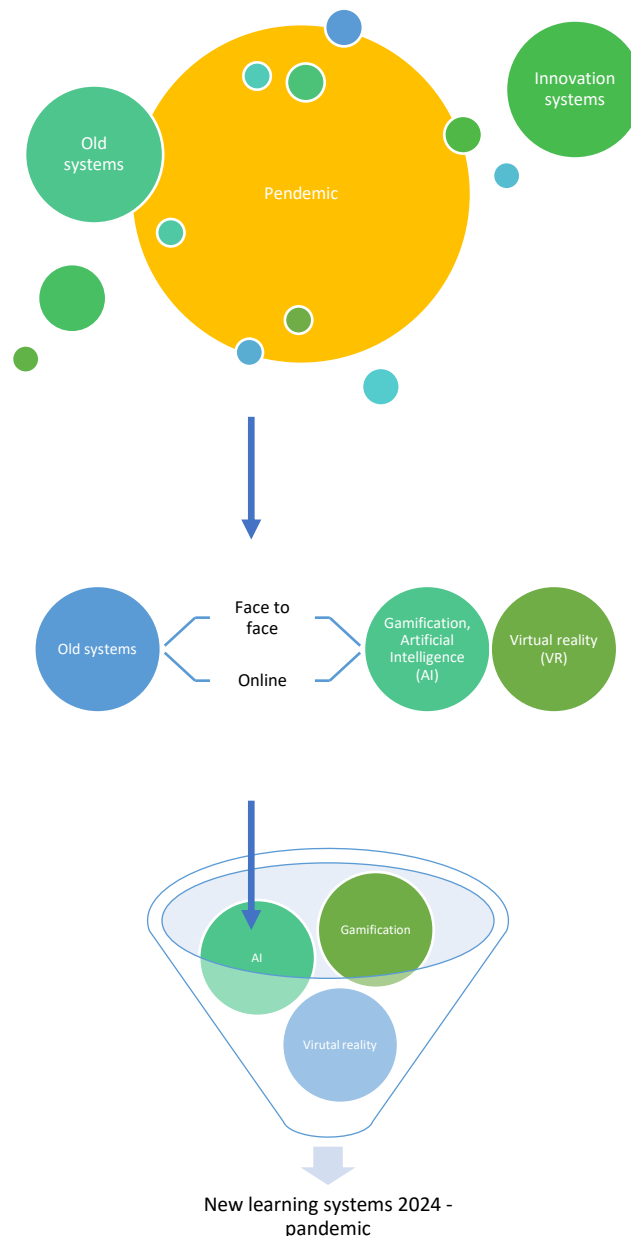

Figure 2. Framework Pandemic Learning Systems 2024

3.3. The Implementation Of Pandemic Learning Systems 2024

After we understand the extensive picture explanation of the 2024 pandemic learning systems framework, the next stage is implementing the framework into our education system so that the learning process can be achieved well and on target. These stages can be explained as follows:

(1) In the initial stage, educational institutions must have two important things that are the basic foundation before implementing the 2024 pandemic learning systems: infrastructure and human resources. These two things are the basic foundations of dealing with a pandemic. If these two things are not ready, there will be problems in implementing pandemic learning systems in 2024. Infrastructure includes the suitability of the building where the school or learning process is carried out and having sufficient computers and the internet to support it. that place[5],[6]. The second most important thing is human resources; if the infrastructure is good but needs more human resources, then it will be difficult to implement the 2024 pandemic learning systems[7],[8]. On the other hand, if the human resources are adequate, but the infrastructure needs to support it, implementing it will have problems. Therefore, the main requirement in implementing the 2024 pandemic learning systems is to have these two things first so that this system can be applied consistently[9],[10],[11],[12].

(2) Choose a lesson subject that will apply gamification, AI, and VR. In this section, educational institutions must determine what subjects will use gamification, AI, and VR. Here, educational institutions will create clusters in which subjects can use AI, which use gamification, and which use VR. At this stage, three things are essential: AI cluster, gamification cluster, VR cluster[13],[14],[15].

(3) Testing- after conducting a cluster on the subject to be taught. Educational institutions that have successfully applied AI to a predetermined subject can carry out testing or, in other words, try it on students to find out whether AI will help in the learning process[16]. Likewise, gamification and VR must be tested to determine how practical this application is in the teaching and learning process[17]. Combinations can also be done to make it better; for example, the subject of supply chain management can use VR to simulate the distribution of goods to consumers. This testing aims first to determine whether students can accept this technology[18]. If there are still implementation deficiencies, they will be consistently corrected[19],[20].

(4) Implementation stage 1 - In the first part of the implementation stage, educational institutions have several classes implementing gamification, AI, and VR in one class. During the first six months, whether this learning method can help students develop themselves by applying this technology will be monitored. If there is a problem within six months, then the problem must be resolved immediately by immediately fixing what is still lacking. This first implementation can be expanded after six months to 3 classes, which will speed up implementation. It is essential to understand that implementing this is long-term, not short-term, so it requires consistency in implementing it[21].

(5) Implementation stage 2- in this second implementation stage, after several classes run for one year, it will be expanded to all classes. What students
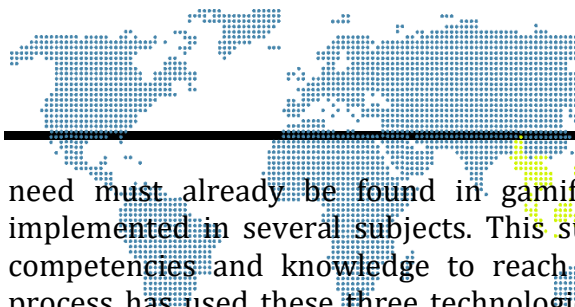
need must already be found in gamification, AI, and VR, which have been implemented in several subjects. This subject must help students develop their competencies and knowledge to reach their highest point. After the learning process has used these three technologies, we will see significant changes to all existing processes (old systems). These processes have gone through innovation (using online media) and have finally implemented the 2024 pandemic learning systems that use gamification, AI, and VR. This second stage must be implemented for six months, then a quick evaluation must be carried out, and a solution must be provided quickly[22],[23],[24].

(6) Implementation stage 3 - in this third implementation stage, all classes and practicums have used the learning process using gamification, AI, and VR. This is because, in this process, all students and educational staff, whether teachers or lecturers, can use gamification, AI, and VR more skillfully. This process must be implemented perfectly within six months if we see that this implementation project will be completed within three years[25],[26].

(7) The system is fully implemented - for this final stage, we need two years to ensure that this implementation can run perfectly. Although several problems may need to be overcome, the implementation should run well if the initial steps are followed consistently. Is five years an extended period? This is short because if another pandemic occurs, our system is ready to face this[27].

So, is there a positive function in implementing these three technologies? The answer is yes because in executing the 2024 pandemic learning system, things that will be fully implemented include:

(1) Functions and uses of gamification, AI, and VR to help students improve their competencies[28],[29],[30]. (2) will the costs be enormous when implementing these three things? This application does not necessarily have to be all three, but you can choose one or a combination of the two technologies; if you can apply all three, it is much better[31],[32]. (3) Implementing this may initially require an extended period, but we must be able to see the long-term of this implementation. If this is successful, it will benefit the teaching and learning process. For more detailed matters, you can read the books that we have published so that complete information can be obtained[33],[34],[35].

Figure 3. Formula Pandemic Learning Systems 2024

4. CONCLUSION

After discussing the 2024 pandemic learning systems framework, In facing a pandemic, we must have two main things to deal with it, namely, information technology infrastructure and human resources who have high competence.

Pandemic Learning Systems 2024 is a concept that can be applied to the education system and adapted to the educational institution's organizational culture. We can change learning patterns by implementing three integrated systems: the old system, which becomes the new one. This ancient system is combined with the new one and continues to use the old one. This decision depends on the educational institution's ability, whether it is ready to face a pandemic.

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