GUYUB: *Journal of Community Engagement* Vol. 6, No. 1, Januari-Maret 2025
p-ISSN: 2723-1232; e-ISSN: 2723-1224 DOI: http://doi.org/10.33650/guyub.v6i2.9906

Improving the Competence of MGMP Informatics Teachers in Preparing Gamification-Based IBT in the Era of Education 5.0

Ika Parma Dewi[1], Lativa Mursyida[2], Ari Suriani[3], Ryan Fikri[4], Randi Proska Sandra[5], Akrimullah Mubai[6], Rizkayeni Marta[7]

Universitas Negeri Padang, Indonesia[1,2,3, 4,5,6,7]
{ika_parma@ft.unp.ac.id[1], mlativa@ft.unp.ac.id[2], arisuriani@fip.unp.ac.id[3], ryanfikri@ft.unp.ac.id[4], randiproska@ft.unp.ac.id[5], akrimullahmubai@unp.ac.id[6], rizkayeni.marta@ft.unp.ac.id[7]}

Submission: 2024-12-02 *Received*: 2025-03-24 *Published*: 2025-03-28

Keywords: *Teachers; Gamification; Internet-Based Test (IBT); Technology Integration.*

Abstract. *The primary issue in technology-based learning assessment is the limited ability of teachers to utilize and develop gamification methods. Most teachers still rely on manual, paper-based evaluation techniques, resulting in suboptimal integration of technology in the assessment process. This challenge necessitates further exploration by education practitioners regarding the implementation of information technology (IT) in learning, particularly for MGMP Informatics teachers. This community engagement program, titled "Development of Internet-Based Testing (IBT) Using Gamification Learning Methods", was conducted at SMPN 1 Tanah Datar. The objectives of this program were to: (1) enhance technological literacy in the education sector; (2) strengthen interest and skills in technology literacy among MGMP Informatics teachers at the junior high school level in Tanah Datar Regency; and (3) improve teachers' ability to design internet-based assessment instruments using a gamification approach.*

The program was implemented using a participatory approach, comprising training sessions, interactive workshops, and hands-on practice in developing internet-based assessment tools. Participants were introduced to various digital evaluation platforms, such as Google Forms, Quizizz, and Kahoot, and were trained on how to integrate gamification elements into learning assessments. The results indicated that 85% of participants showed an improvement in their understanding and skills in utilizing internet-based assessment technology. Additionally, teachers began adopting gamification methods in assessments, leading to increased student engagement in the learning process. This initiative is expected to encourage teachers to continuously develop innovative and interactive assessment methods aligned with technological advancements in education.

Katakunci:
Guru; Gamifikasi; Tes Berbasis Internet (IBT); Integrasi Teknologi.

Abstrak. Permasalahan utama dalam evaluasi pembelajaran berbasis teknologi adalah keterbatasan kemampuan guru dalam memanfaatkan dan mengembangkan metode gamifikasi. Sebagian besar guru masih bergantung pada teknik evaluasi manual berbasis

kertas, sehingga kurang optimal dalam mengintegrasikan teknologi dalam proses penilaian. Tantangan ini menjadi perhatian bagi para praktisi pendidikan untuk mengkaji penerapan teknologi informasi (TI) dalam pembelajaran, khususnya bagi guru MGMP Informatika. Pengabdian "Pengembangan Tes Berbasis Internet (IBT) dengan Metode Pembelajaran Gamifikasi" pada SMPN 1 Tanah Datar. Kegiatan ini bertujuan untuk: (1) meningkatkan literasi teknologi dalam sektor pendidikan; (2) memperkuat minat dan keterampilan literasi teknologi di kalangan guru MGMP Informatika SMP di Kabupaten Tanah Datar; serta (3) meningkatkan kemampuan guru dalam merancang instrumen evaluasi berbasis internet dengan pendekatan gamifikasi. Metode pelaksanaan kegiatan ini meliputi pendekatan partisipatif, yang terdiri dari sesi pelatihan, lokakarya interaktif, serta praktik langsung dalam pembuatan instrumen evaluasi berbasis internet. Para peserta diperkenalkan dengan berbagai platform evaluasi digital, seperti Google Forms, Quizizz, dan Kahoot, serta diberikan pelatihan tentang cara mengintegrasikan elemen gamifikasi dalam evaluasi pembelajaran. Hasil dari kegiatan ini menunjukkan bahwa sebanyak 85% peserta mengalami peningkatan pemahaman dan keterampilan dalam menggunakan teknologi evaluasi berbasis internet. Selain itu, para guru mulai mengadopsi metode gamifikasi dalam penilaian, yang ditandai dengan meningkatnya keterlibatan siswa dalam proses pembelajaran. Dengan adanya kegiatan ini, diharapkan guru dapat terus mengembangkan metode evaluasi inovatif yang lebih interaktif dan sesuai dengan perkembangan teknologi pendidikan.

1 Introduction

Pedagogic competence is one of the primary abilities a teacher must have, including the management of learning activities. This competency is related to the teacher's ability to design learning tools, including the selection of approaches, methods, media, teaching materials, student worksheets (LKPD), and learning evaluation (Andriana et al., 2022). Pedagogic competencies also include basic teaching skills, such as opening and closing lessons, providing reinforcement, asking questions effectively, explaining concepts, creating variations in learning, mentoring large and small groups, and managing classes (Andhika et al., 2024). Mastery of media and technology in learning is also important for a teacher's skills (Astuti et al., 2021).

As the times evolve, a professional teacher must be responsive to changes, including the impact of the Industrial Revolution 4.0 on the

education sector (Astuti et al., 2021). This revolution presents unlimited information systems based on computing and big data, where the digitization of online-based technology dominates connectivity between individuals in various parts of the world (Sestino et al., 2022). These changes cover many aspects, including basic technology, social, and macroeconomics. The main characteristics of the Industrial Revolution 4.0 are artificial intelligence, iCloud data, the Internet of people, big data, the Internet of things (IoT), and digitalization of learning in the education era 5.0 (Sakarina et al., 2022).

In formal education, teachers play a central role in educating students from psychomotor, cognitive, and practical aspects. Educators have a massive role in improving students' abilities in terms of understanding (mental) and skills through learning activities. Students need to be equipped with a maturity of understanding (Cognitive). Skill improvement is undoubtedly based on learning design, one of which is a form of learning evaluation. The form for the assessment through online platforms can spur students' enthusiasm and interest (Ibisu, 2024). Therefore, knowledge, skills, and mastery of information and communication technology support the learning process, which is helpful for educators (Setiawaty et al., 2024). Educators are seen as necessary to develop their competencies to support maximizing their roles. As stated in Government Regulation Number 74 of 2008 concerning teachers, one of the competencies that teachers must master is mastering science and information technology according to the times. Therefore, educators must be equipped with training activities to improve pedagogical competence. Another fact is that around 60% of teachers in Indonesia still lack technology, so they still use conventional teaching methods (Mukarromah & Sartika, 2024).

One innovative solution to improving the quality of technology-based learning is to implement learning gamification. Learning Gamification integrates play elements into the learning process to increase student engagement and motivation (Nguyen-Viet & Nguyen-Viet, 2025). The main components of Gamification are points, badges, levels, and avatars.

Gamification learning applied in learning can be in the form of Canva, Edmodo (Syamsudin et al., 2024), Articulate Storyline 3, quizizz, Kahoot!,

word wall, quizlet, candy, and Paddles. Of the various types of Gamification learning mentioned above, community service activities focus on training and mentoring gamification learning of word walls, Quiziz, Padlet, and Mentimeter. This is based on requests made by partners. Training and mentoring of gamification-based learning at MGMP Informatics Teachers of Tanah Datar Regency to improve teacher pedagogical competence.

Table 1. Data of MGMP Informatics Teachers in Tanah Datar Regency using the Gamification Method

No.	JUNIOR	Number of Informatics Teachers	Evaluation of Gamification Methods	Evaluation with Conventional (Paper)
1	UPT SMPN 3 SUNGAI TARAB	5	0	5
2	UPT SMPN 1 PADANG GANTING	6	1	5
3	UPT SMPN 1 SUNGAYANG	5	0	5
4	UPT SMPN 2 SUNGAI TARAB	6	0	6
5	UPT SMPN 1 BATUSANGKAR	4	1	3
6	UPT SMPN 2 BATUSANGKAR	6	1	5
7	UPT SMPN 3 BATUSANGKAR	6	0	6
8	UPT SMPN 1 RAMBATAN	6	1	5
9	UPT SMPN 3 ENCROACHMENT	3	1	2
10	UPT SMPN 2 ENCROACHMENT	4	1	3
11	UPT SMPN 2 PADANG GANTING	5	0	5
12	UPT SMPN 1 TANJUNG EMAS	5	0	5
13	UPT SMPN 2 TANJUNG EMAS	4	0	4
14	UPT SMPN 1 Lintau Buo	3	0	3

15	UPT SMPN 1 LINTAU BUO UTARA	4	0	4

Source: Chairman of MGMP SMP Informatics Tanah Datar Regency

Observations and interviews conducted by the PkM team with partners indicate that schools under the MGMP Informatics Teachers Association in Tanah Datar Regency have not yet implemented gamification-based learning. One of the main challenges faced is the low competency of teachers in utilizing and designing assessments using gamification methods. To this day, most teachers still rely on conventional evaluation methods, such as paper-based manual assessments, which are less effective in enhancing student motivation and participation. This presents a significant challenge, especially in the current digital era, where information technology should be optimally integrated into education. Unfortunately, many teachers are unfamiliar with the implementation of gamified learning using platforms such as Wordwall, Quizizz, Padlet, and Mentimeter, and they have never received adequate training in this area (Rahmatullah et al., 2022). Moreover, the use of technology in the teaching process remains highly limited. Therefore, this community service program, which provides training and mentoring for MGMP Informatics teachers, is highly crucial. The program will equip educators with both theoretical knowledge and practical skills to implement gamification in learning. As a result, teachers can enhance the quality of education, create more interactive learning environments, and encourage students to be more motivated and actively engaged in the learning process (Mubaroq & Prafitasari, 2022).

The uniqueness of this community service program lies in its innovative approach to improving teacher competence through the application of gamification in internet-based testing (IBT). Unlike conventional training, this program not only focuses on technology utilization but also emphasizes strategies to increase student motivation and engagement through game-based elements in assessments. This aspect is particularly crucial, as most teachers in the MGMP Informatics Association of Tanah Datar Regency still rely on traditional paper-based evaluation methods, which tend to be less engaging and interactive for students.

Additionally, this program adopts a need-based approach tailored to the specific requests of partner teachers. The platforms introduced—such as Wordwall, Quizizz, Padlet, and Mentimeter—are selected based on direct feedback from the educators, ensuring that the training remains relevant and applicable to their teaching needs. The program also integrates hands-on mentoring, combining theoretical instruction with practical application, allowing teachers to create gamified assessment instruments that can be immediately implemented in their classrooms.

Another significant advantage of this program is its alignment with the demands of Education 5.0, which emphasizes digitalization and the integration of technology into learning. Through this initiative, teachers will be better prepared to navigate digital transformation, enhance their technological literacy, and develop more engaging, efficient, and data-driven assessment methods.

2 Method

The Asset-Based Community Development (ABCD) approach is highly suitable for empowering women in rural areas to enhance their economic value (Kretzmann & McKnight, 1996). This approach leverages the existing strengths and resources within a community to create sustainable development. The activities were conducted in Tegalsari Village, Plered District, Cirebon Regency, from July 15 to August 25, 2024. The target of the initiative was a group of housewives from Wadas Ilir Block, Tegalsari Village. Various tools and equipment were utilized during this program, including village demographic data, stationery, a camera, interview forms, buckets, catfish seedlings, kale seedlings, and pellet feed.

This community service program employs the Asset-Based Community Development (ABCD) approach. This approach is chosen because it emphasizes community empowerment by utilizing existing assets and potentials rather than merely identifying problems and providing external solutions. In the context of training MGMP Informatics teachers at the junior high school level in Tanah Datar Regency, the ABCD approach enables teachers to optimize existing school facilities, develop

their own skills, and collaborate in creating more innovative and interactive teaching methods.

Diagram 1: Stages in community service using the ABCD approach

Moreover, this approach is participatory, meaning that teachers are not just passive beneficiaries but actively involved in designing technology-based learning solutions that suit their needs. Thus, the training not only provides new skills but also fosters awareness of the importance of technology in education in a sustainable manner. The ABCD approach also ensures that the changes implemented are long-lasting, as they are built upon the community's strengths. As a result, even after the program concludes, teachers will still be able to develop and apply gamification-based learning methods independently. The stages of this community service program can be seen in the diagram below.

The initial discovery phase aims to identify the assets and needs of partners, namely Informatics MGMP teachers at SMP (junior high schools) in Tanah Datar Regency. Based on interviews with several school principals, it was found that teachers have not yet fully utilized application-based learning media, students experience boredom due to less varied teaching methods, and there has been no specific training on the use of applications in learning. In addition, school facilities are considered adequate, but there is still a need to improve teachers' skills in developing technology-based learning media.

After identifying the challenges faced, solutions were formulated to enhance teachers' capacity in utilizing application-based learning technology. The proposed solution involves training and workshops on Developing Internet-Based Tests Using the Gamification Method. Gamification was chosen as it can increase learning motivation, strengthen memory retention, and enhance student engagement through interactive mechanisms such as badges, points, and leaderboards. This stage corresponds to the Dream phase.

In the Design phase, the implementation of the community service program is carried out through a series of training and mentoring activities from July to September 2024. The training sessions are conducted face-to-face at the hall of SMP Negeri 1 Tanah Datar Regency, targeting 15 Informatics MGMP teachers at the junior high school level. On the first day, the training begins with an introduction to the importance of technology integration in learning, followed by an ice-breaking session to foster interaction between participants and facilitators. Next, participants receive material on the stages of developing Internet-Based Tests using the Gamification Method. The second day focuses on hands-on practice with gamification platforms such as Wordwall, Quizizz, Padlet, and Mentimeter. On the third day, participants design a gamification project relevant to their respective subjects. The fourth day is dedicated to evaluation, certificate distribution, and the closing ceremony.

After the training sessions, additional mentoring was provided for teachers who faced difficulties in developing digital teaching materials based on games and quizzes. This mentoring was conducted through discussions, hands-on practice, and face-to-face guidance over four days. The results of this activity indicate that teachers have become more aware of the importance of mastering technology in education, utilizing application-based media, and diversifying learning media to enhance students' learning motivation. Through this training, it is expected that teachers will continue to develop and implement the gamification method in the learning process sustainably. This stage represents the final phase, Destiny

3 Results

Based on the stages carried out in this community service, the following results will explain in detail the results of community service based on the ABCD approach as follows:

a. Discovery

The first stage of this community service program is to identify the main challenges faced by MGMP Informatics teachers in Tanah Datar Regency in utilizing technology for learning evaluation. Observations and interviews indicate that most teachers still rely on conventional paper-based evaluation methods and have limitations in using and developing gamification methods for learning.

Figure 2. Atmosphere of the Discussion on Needs Analysis and Issues with Partners

The results of the activities in Figure 2 highlight several needs of teachers in optimizing their capacity as educators. Although schools have fairly adequate facilities, teachers' skills in developing technology-based learning media still need improvement. Additionally, interviews with school principals and teachers reveal that many of them have never received formal training on gamification in learning. This has led to the low utilization of digital applications such as Quizizz, Wordwall, Padlet, and Mentimeter in evaluation activities. Students also expressed that monotonous evaluation methods often make them less motivated to learn. Therefore, this program is designed to provide solutions to these issues by offering intensive training and mentoring for teachers so they can better master gamification methods.

b. Dream

Based on the initial findings, the program's objective was formulated to enhance teachers' technological literacy in designing internet-based evaluation instruments using gamification methods. The ultimate goal of this program is for teachers to independently develop and implement interactive and engaging technology-based evaluation methods, thereby increasing student engagement in the learning process. Additionally, teachers are expected not only to utilize internet-based evaluation technology but also to gain confidence in adapting new methods that are more relevant to the current era.

With gamification in evaluation, students will be more motivated to learn as the assessment process becomes more enjoyable and less monotonous. Teachers are also expected to integrate this technology into the daily curriculum, not just as an assessment method but also as a teaching aid. Consequently, the primary vision of this program is to create a more modern, innovative, and technology-driven learning environment for both teachers and students in Tanah Datar.

Furthermore, this program aims to build a learning community among teachers to facilitate knowledge-sharing and collaboration in implementing technology-based evaluation. Through discussion forums, training sessions, and collaborative efforts, teachers are expected to continuously develop their digital skills and discover the best strategies for adapting gamification in learning assessments. An active learning community will not only provide teachers with support in overcoming technical challenges but also inspire them with best practices shared by their peers. This initiative is expected to foster a more dynamic and technology-responsive educational ecosystem, ensuring continuous improvements in the quality of learning.

c. Design

To achieve these objectives, the community service program is designed in several stages, namely:

Training and Workshop: Teachers are provided with materials on digital literacy, the benefits, and the use of gamification platforms

such as Wordwall, Quizizz, Padlet, and Mentimeter. This training is conducted in person at SMPN 1 Tanah Datar using a participatory approach, where participants not only listen to theoretical explanations but also have the opportunity to directly practice using various digital platforms.

Hands-on Practice: Teachers are given the opportunity to try and develop internet-based evaluation instruments using gamification methods. They are assigned tasks to create interactive quizzes and assessments using the platforms introduced and to demonstrate their work to other participants.

Mentoring and Evaluation: Following the training, mentoring sessions are conducted to ensure the implementation of gamification methods in assessments. Additionally, an evaluation is carried out to measure teachers' understanding and skills before and after the training. Teachers facing difficulties receive additional personalized guidance to help them master gamification techniques more effectively. The evaluation process includes comparing pre-test and post-test results, as well as conducting participant satisfaction surveys.

d. Define

After the implementation of training and mentoring, an evaluation was conducted to assess the extent to which the program achieved its objectives. The post-test results showed an improvement in teachers' understanding and skills in using internet-based evaluation technology. A total of 85% of participants demonstrated significant progress in utilizing gamification methods for learning assessments.

Additionally, classroom observations in schools that implemented gamification revealed an increase in student participation during the learning process. Students became more enthusiastic about evaluations due to the game elements that made them more engaged. Teachers who previously struggled with technology began to feel more confident and showed interest in continuously developing these methods in their classrooms.

Through this evaluation, the program ensures that the changes brought about are not merely temporary but have a lasting impact on improving the quality of learning in participating schools.

Table 2. The results of the teachers' activities can be seen in the table below.

No	Nama Peserta	Link Gamification (Wordwall, Quiziz, Padlet, and Mentimeter)
1	Participant 1	https://wordwall.net/resource/60035764 https://www.mentimeter.com/app/presentation/alfdhtab3fwdy26nermj4q95bp7nc1ct/view
2	Participant 2	https://wordwall.net/resource/75947863 https://www.mentimeter.com/app/presentation/al7izbk49822hvj3b1e79awrr2hs1wyr/view
3	Participant 3	https://wordwall.net/resource/75947943 https://www.mentimeter.com/app/presentation/al6jufhwbzh2htt21p56pumhscwx6abj/view
4	Participant 4	https://wordwall.net/resource/69434767 https://padlet.com/qaharudinjamal07/perangkat-lunak-w0eohvxfdqc5n1vm
5	Participant 5	https://wordwall.net/id/resource/75948871 https://padlet.com/deviamerieti63/sistem-komputer-17ncn4vy95u4awoa
6	Participant 6	https://wordwall.net/resource/75948498 https://padlet.com/irmasuryani961/materi-ajar-tentang-berpikir-

No	Nama Peserta	Link Gamification (Wordwall, Quiziz, Padlet, and Mentimeter)
		komputasional-kelas-7-rgbx5tv343ta1dio
7	Participant 7	https://wordwall.net/resource/75948312 https://padlet.com/deviamerieti63/sistem-komputer-17ncn4vy95u4awoa
8	Participant 8	https://wordwall.net/id/resource/75948065 https://padlet.com/ritahastarita89/assessment-polls-sejarah-komputer-bmeo3enknbtx1d6w
9	Participant 9	https://wordwall.net/id/resource/75949173 https://quizizz.com/admin/quiz/start_new/66a34fd6fbb8de9a3ec74fae
10	Participant 10	https://wordwall.net/resource/75948281 https://quizizz.com/admin/quiz/66a351a8cec75efdfba77bc7/kuis-informatika-kelas-8?source=quiz_share
11	Participant 11	https://wordwall.net/id/resource/75949404 https://quizizz.com/admin/quiz/66a34ab63cffda2eda83ae87/kuis-berpikir-komputasional?source=quiz_share
12	Participant 12	https://wordwall.net/id/resource/75947916 https://padlet.com/ritahastarita89/assessment-polls-sejarah-komputer-bmeo3enknbtx1d6w
13	Participant 13	https://wordwall.net/resource/75948123

No	Nama Peserta	Link Gamification (Wordwall, Quiziz, Padlet, and Mentimeter)
		https://www.mentimeter.com/app/presentation/alg6128ov1v3pzr65n2t45oymd1o54vp/view
14	Participant 14	https://wordwall.net/id/resource/75948065 https://www.mentimeter.com/app/presentation/al57xbkjh3bo2fvgxupr8f91jbmeg3sj/view?question=ovebe4n7uxz1
15	Participant 15	https://wordwall.net/resource/75948376 https://www.mentimeter.com/app/presentation/al5aqktsxhzsr534pmrabr3yundevnhy/view?question=p41hrg8h8bda

The table above presents the results of the gamification activities conducted by the participating teachers, showcasing their ability to create interactive learning assessments using various digital platforms. Each participant developed and shared gamified evaluation tools through platforms such as Wordwall, Quizizz, Padlet, and Mentimeter. The links provided demonstrate the diverse range of topics covered, including computational thinking, computer systems, and general informatics. The data highlights the successful integration of gamification methods into the evaluation process, reflecting an increase in teachers' digital literacy and their capability to design engaging, technology-based assessments for students.

e. Destiny

As a sustainability measure, teachers are encouraged to continue developing gamification-based evaluation methods independently. With the availability of training modules and certificates as guides, teachers can replicate and disseminate these best practices to their colleagues. Additionally, the MGMP Informatics community provides a platform for teachers to share experiences and innovations in technology-based learning evaluations.

Some teachers who have successfully implemented gamification in their classrooms are expected to become mentors for others, creating a domino effect in improving the quality of learning assessments. The sustainability of this program is further supported by regular consultation sessions, allowing teachers to receive ongoing guidance if they encounter challenges in implementing gamification. Through these initiatives, it is hoped that teachers will not only adopt new technology but also continue to innovate in creating more engaging and effective learning experiences for their students.

4 Discussion

The implementation of community service activities for MGMP Informatics teachers of Tanah Datar Regency Junior High School involves various implementation steps to overcome the problem of IBT Preparation Using the Gamification Learning Method among teachers. The first step is to compile and carry out intensive training on IBT Preparation Using the Gamification Learning Method for teachers, including theory, practice, and interactive discussions, as well as evaluation through pre-tests and post-tests to measure understanding. In addition, an initial assessment of the school's technology infrastructure was carried out, followed by procuring hardware and software, improving the internet network, and training teachers and students on its use. The continuous mentoring program is also conducted with a regular consultation schedule with gamification experts and development monitoring. The Internet-based test (IBT) preparation using the gamification learning method is carried out through teacher collaboration, followed by classroom trials and revisions based on feedback. Program evaluation and monitoring are carried out periodically through questionnaires, interviews, and observations to assess the program's effectiveness and identify areas for improvement.

After the training, a post-test is carried out to measure the improvement of teachers' knowledge and skills after participating in the program. The post-test includes questions and tasks similar to the pre-test to ensure valid and consistent comparisons. The results of the post-

test show how practical the training is in improving the preparation for the Internet Test (IBT) by using the gamification learning method.

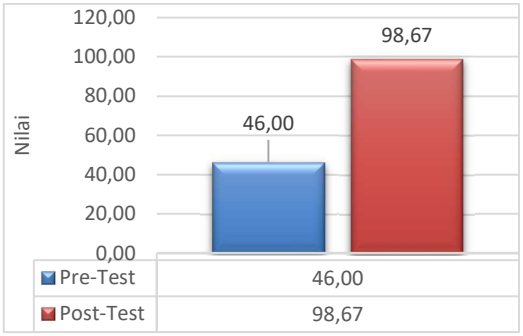
The following are the results of the Pre-Test and Post-Test training activities, which involved 15 MGMP Informatics teachers of Tanah Datar Regency Junior High School. These activities showed an increase in knowledge in preparing for Internet-Based Tests (IBT) using the gamification learning method.

Table 3. Pre-Test and Post-Test Results for the Preparation of Internet-Based Test (IBT) using the gamification learning method

No.	Participant Name	Pre-Test		Post-Test	
		Correct Amount	Value	Correct Amount	Value
1	Participant 1	4	40	10	100
2	Participant 2	5	50	10	100
3	Participant 3	4	40	10	100
4	Participant 4	4	40	10	100
5	Participant 5	5	50	10	100
6	Participant 6	4	40	10	100
7	Participant 7	5	50	10	100
8	Participant 8	7	70	9	90
9	Participant 9	4	40	10	100
10	Participant 10	5	50	10	100
11	Participant 11	4	40	10	100
12	Participant 12	4	40	9	90
13	Participant 13	5	50	10	100
14	Participant 14	4	40	10	100
15	Participant 15	5	50	10	100
Sum		**69.00**	**690.00**	**148.00**	**1480.00**
Average		**4.60**	**46.00**	**9.87**	**98.67**

Based on the results of the post-test, there was an increased understanding of the preparation of Internet Test (IBT) using the gamification learning method consisting of Wordwall, Quiziz, Padlet, and

mentimeter experienced by the workshop participating teachers. Increasing teacher competence towards gamified learning impacts teachers' professional competence. Professional competence has several indicators, namely: (1) mastering the material, structure, concepts, and scientific mindset that support the subjects taught; (2) mastering the Competency Standards and Basic Competencies of the subjects/fields of development that are taught; (3) developing subject matter that is taught creatively; (4) sustainably developing professionalism by taking reflective actions; and (5) utilizing information and communication technology to communicate and develop oneself (Lutfiana et al., 2024).



Picture 3. Pre-Test and Post-Test Results for the Preparation of Internet-Based Test (IBT) using the gamification learning method

Gamification-based learning has been proven to enhance students' motivation to learn (Rahim et al., 2024). Various studies indicate that the application of gamification in the learning process can make students more engaged and interested in understanding the material. The effectiveness of learning through the use of gamification features is generally categorized as good, with a percentage of 69%. This figure demonstrates that the gamification method has a positive impact on student engagement in the learning process (Sugiarto et al., 2024).

Gamification not only plays a role in increasing students' motivation but also contributes to improving their learning outcomes (Aguiar-Castillo et al., 2021). By incorporating game elements into learning, students tend to be more focused, strive to complete challenges, and experience a sense of achievement when successfully completing gamified tasks or quizzes. This aligns with the concept of active learning,

where students are directly involved in the learning process, leading to a deeper understanding of the subject matter (Ratan et al., 2022).

With the advancement of technology, teachers are required to master and design Internet-Based Tests (IBTs) using the gamification learning method (Rozi et al., 2024). The integration of technology in learning assessments makes the evaluation process more engaging, interactive, and efficient (Haleem et al., 2022). Therefore, teachers must possess the skills to design and implement gamification in IBTs to ensure more accurate assessments while providing students with an enjoyable learning experience (Huang et al., 2024).

Mastering gamification-based learning is also part of the competencies that professional teachers must possess, including professional competence, pedagogical competence, personality competence, and social competence. By integrating technology and gamification into learning, teachers can more effectively guide students toward achieving optimal learning outcomes.

5 Conclusion

Based on the implementation of the Internet-Based Test (IBT) training using the gamification learning method for Informatics MGMP teachers at SMP (Junior High Schools) in Tanah Datar Regency, it can be concluded that this activity has increased participants' interest in using technology for learning evaluation. This conclusion is based on pre-test and post-test data obtained through questionnaires. The pre-test results showed that the percentage of participants who were unfamiliar with gamification was relatively high, at approximately 46%. After the training, which introduced four platforms, 98.67% of participants reported feeling enthusiastic and motivated to learn all gamification applications. These findings indicate that this training effectively optimizes the implementation of Internet-Based Tests (IBT) using the gamification learning method while also raising awareness of digital literacy, particularly in the field of educational technology.

Despite the positive impact of the training, several weaknesses need to be addressed, such as the limited duration of the training, which

prevented participants from fully exploring all features of the introduced gamification platforms, as well as the varying levels of participants' technological proficiency, requiring additional guidance for some individuals. Additionally, limited access to devices and stable internet connections posed challenges in fully implementing IBT. To overcome these obstacles, it is recommended that future training sessions include follow-up sessions or periodic mentoring to ensure participants understand and can effectively implement gamification-based IBT in their teaching practices. Moreover, the training should initially focus on one or two platforms before introducing additional ones to enhance participants' comprehension. Organizers should also collaborate with relevant institutions to provide better technological infrastructure support, such as stable internet access and appropriate devices, ensuring the successful implementation of gamification-based IBT in education.

6 Acknowledgment

The author extends gratitude to the Institute for Research and Community Service at Universitas Negeri Padang for the support provided under contract number 2298/UN35.15/PM/2024

7 Reference

Aguiar-Castillo, L., Clavijo-Rodriguez, A., Hernández-López, L., De Saa-Pérez, P., & Pérez-Jiménez, R. (2021). Gamification and deep learning approaches in higher education. *Journal of Hospitality, Leisure, Sport & Tourism Education*, *29*, 100290. https://doi.org/10.1016/j.jhlste.2020.100290

Andhika, M. R., Suroto, S., Syahputra, R., & Pasaribu, L. H. (2024). Teacher's Skills in Classroom Management According to the Characteristics of Students in Elementary School. *Jurnal Ilmiah Teunuleh*, *5*(3), Article 3. https://doi.org/10.51612/teunuleh.v5i3.159

Andriana, E., Fauzany, P. S. D., & Alamsyah, T. P. (2022). 21st Century Multimedia Innovation: Development of E-LKPD Based On

Scientific Inquiry in Science Class. *Journal of Innovation in Educational and Cultural Research*, *3*(4), Article 4. https://doi.org/10.46843/jiecr.v3i4.242

Astuti, M., Arifin, Z., Mutohhari, F., & Nurtanto, M. (2021). Competency of Digital Technology: The Maturity Levels of Teachers and Students in Vocational Education in Indonesia. *Journal of Education Technology*, *5*(2), Article 2. https://doi.org/10.23887/jet.v5i3.35108

Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, *3*, 275–285. https://doi.org/10.1016/j.susoc.2022.05.004

Huang, X., Xu, W., Li, F., & Yu, Z. (2024). A Meta-analysis of Effects of Automated Writing Evaluation on Anxiety, Motivation, and Second Language Writing Skills. *The Asia-Pacific Education Researcher*, *33*(4), 957–976. https://doi.org/10.1007/s40299-024-00865-y

Ibisu, A. E. (2024). *Development of a Gamification Model for Personalized E-learning* (arXiv:2404.15301). arXiv. https://doi.org/10.48550/arXiv.2404.15301

Lutfiana, R. F., Syahri, M., Mansur, M., & Jamaludin, J. (2024). Pelatihan dan pendampingan pembelajaran berbasis gamifikasi di SMP 'Aisyiyah Muhammadiyah 3 Malang untuk meningkatkan kompetensi pedagogi guru. *SELAPARANG: Jurnal Pengabdian Masyarakat Berkemajuan*, *8*(1), 469–478. https://doi.org/10.31764/jpmb.v8i1.22072

Mubaroq, S., & Prafitasari, A. N. (2022). PKM Pelatihan Penyusunan Media Pembelajaran Android Interaktif bagi Guru MGMP IPA Wilayah Jember Selatan. *GUYUB: Journal of Community Engagement*, *3*(1), Article 1. https://doi.org/10.33650/guyub.v3i1.3675

Mukarromah, M., & Sartika, R. (2024). Transformasi Kompetensi dan Profesionalisme Guru Pendidikan Agama Islam: Problematika dan Solusi untuk Meningkatkan Kualitas Pendidikan di Indonesia. *EL-*

BANAT: Jurnal Pemikiran dan Pendidikan Islam, *14*(2), Article 2. https://doi.org/10.54180/elbanat.2024.14.2.304-325

Nguyen-Viet, B., & Nguyen-Viet, B. (2025). The synergy of immersion and basic psychological needs satisfaction: Exploring gamification's impact on student engagement and learning outcomes. *Acta Psychologica*, *252*, 104660. https://doi.org/10.1016/j.actpsy.2024.104660

Rahim, M., Mohammed, L. A., & Tatlah, I. A. (2024). The role of gamification-based learning on prospective teacher's lower order thinking abilities. *Journal of Language and Pragmatics Studies*, *3*(1), Article 1. https://doi.org/10.58881/jlps.v3i1.46

Rahmatullah, A. S., Mulyasa, E., Syahrani, S., Pongpalilu, F., & Putri, R. E. (2022). Digital era 4.0: The contribution to education and student psychology. *Linguistics and Culture Review*, 89–107. https://doi.org/10.21744/lingcure.v6nS3.2064

Ratan, R., Ucha, C., Lei, Y., Lim, C., Triwibowo, W., Yelon, S., Sheahan, A., Lamb, B., Deni, B., & Hua Chen, V. H. (2022). How do social presence and active learning in synchronous and asynchronous online classes relate to students' perceived course gains? *Computers & Education*, *191*, 104621. https://doi.org/10.1016/j.compedu.2022.104621

Rozi, F., Fawaid, A., Basid, A., Warliah, W., Agus R, A. H., & Zubaidi, A. (2024). Cyber Risk in Learning 4.0: Indigenous Parenting in Dealing with Children. *2024 10th International Conference on Education and Technology (ICET)*, 67–73. https://doi.org/10.1109/ICET64717.2024.10778471

Sakarina, S., Ena, Z., Jenita, Cakranegara, P. A., & Surahman, S. (2022). Digital Transformation in Human Resource Management in the Industrial Age 4.0. *Quantitative Economics and Management Studies*, *3*(5), 750–756. https://doi.org/10.35877/454RI.qems1067

Sestino, A., Giraldi, L., Cedrola, E., Zamani, S. Z., & Guido, G. (2022). The Business Opportunity of Blockchain Value Creation among the

Internet of Value. *Global Business Review*, 09721509221115012. https://doi.org/10.1177/09721509221115012

Setiawaty, S., Lukman, I. R., Imanda, R., Sudirman, S., & Rauzatuzzikrina, R. (2024). Integrating of Mobile Augmented Reality Applications Through Inquiry Learning to Improve Students' Science Process Skills and Concept Mastery. *Jurnal Pendidikan IPA Indonesia*, *13*(1), Article 1. https://doi.org/10.15294/jpii.v13i1.48891

Sugiarto, K., Wicaksono, R. K. B., Aslamiyah, W., Ramadhani, R. F., Wredanadi, M. G. S., Putri, D. C. A., & Fatihah, R. J. (2024). Optimalisasi Komunitas Belajar bagi Guru di SMA Muhammadiyah 1 Jombang. *GUYUB: Journal of Community Engagement*, *5*(4), Article 4. https://doi.org/10.33650/guyub.v5i4.9713

Syamsudin, I., Ningsih, K. A., Rachmah, S., & Rasilah, R. (2024). IT-Based Media in Mathematics Learning in Elementary Schools. *Journal of Mathematics Instruction, Social Research and Opinion*, *3*(3), Article 3. https://doi.org/10.58421/misro.v3i3.273