

On App: A Reward-Based Classroom Management App In Improving Learners' On-Task Behavior

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ABSTRACT: *This study examined the effectiveness of a reward-based classroom management application in improving learners' on-task behavior, a common challenge for pre-service teachers. Grounded in Behaviorist Theory and positive reinforcement, it explored how a reward-based system influences learner behavior. An explanatory single-case study with qualitative elements was conducted among twenty (20) pre-service teachers at Pedro Acharon Sr. Central Elementary School in General Santos City during the 2025–2026 academic year. Data were collected through pre- and post-intervention interviews over a 20-day implementation, where the application was used in individual and group activities. Before the intervention, learners showed low engagement, limited attention, disruptive behavior, and poor collaboration. After implementation, improvements were observed in focus, participation, task compliance, and behavior. Features such as rewards, immediate feedback, and visual design supported sustained attention and on-task behavior. The study concludes that the application effectively improves learners' on-task behavior and supports classroom management among pre-service teachers. Therefore, it is recommended that school administrators, teachers, and pre-service teachers integrate reward-based digital classroom management tools to improve learner engagement and classroom behavior, while future researchers further examine their effectiveness in different educational contexts.*

Keywords: *On-task behavior, reward-based classroom management, classroom behavior.*

ABSTRAK: Penelitian ini menguji efektivitas aplikasi manajemen kelas berbasis penghargaan (*reward-based classroom management*) dalam meningkatkan perilaku terikat tugas (*on-task behavior*) peserta didik, yang merupakan tantangan umum bagi calon guru. Berlandaskan pada Teori Behavioristik dan penguatan positif (*positive reinforcement*), penelitian ini mengeksplorasi bagaimana sistem berbasis penghargaan memengaruhi perilaku peserta didik. Penelitian studi kasus tunggal eksplanatif (*explanatory single-case study*) dengan elemen kualitatif ini dilakukan terhadap dua puluh (20) calon guru di Pedro Acharon Sr. Central Elementary School di Kota General Santos pada tahun ajaran 2025–2026. Data dikumpulkan melalui wawancara pra- dan pasca-intervensi selama 20 hari implementasi, di mana aplikasi tersebut digunakan dalam kegiatan individu maupun kelompok. Sebelum intervensi dilakukan, peserta didik menunjukkan keterlibatan yang rendah, rentang perhatian yang terbatas, perilaku yang mengganggu (*disruptive behavior*), serta kolaborasi yang buruk. Setelah implementasi, terlihat adanya peningkatan dalam hal fokus, partisipasi, kepatuhan terhadap tugas, dan perilaku. Fitur-fitur seperti penghargaan, umpan balik langsung, dan

desain visual terbukti mendukung perhatian yang berkelanjutan serta perilaku terikat tugas. Penelitian ini menyimpulkan bahwa aplikasi tersebut efektif dalam meningkatkan perilaku terikat tugas peserta didik dan mendukung pengelolaan kelas bagi para calon guru. Oleh karena itu, disarankan agar administrator sekolah, guru, dan calon guru mengintegrasikan perangkat manajemen kelas digital berbasis penghargaan untuk meningkatkan keterlibatan dan perilaku siswa di kelas, sementara peneliti selanjutnya diharapkan dapat menguji lebih lanjut efektivitas perangkat tersebut dalam konteks pendidikan yang berbeda.

Kata kunci: Perilaku terikat tugas (*on-task behavior*), manajemen kelas berbasis penghargaan, perilaku kelas.

I. INTRODUCTION

In the classroom, the challenge is to keep students attentive and engaged in order for them to achieve higher learning results. One of the most visible aspects of student engagement, on-task behaviour, consists of verbal or motor activity compatible with classroom rules and objectives (Mahar, 2019). Such behaviors might consist of responding to questions, contributing to class discussions, or engaging in independent work on assigned activities (Beckmen et al., 2019; Lane et al., 2020). Being on task is crucial for creating a context of learning that is productive, and where students are not only academically involved, but also contribute to creating collegial and social learning contexts (Fiveable, 2024).

With the difficulty of keeping students engaged, particularly in today's large and heterogeneous classrooms, reward-based classroom management systems are receiving more attention. These programs use various forms of positive reinforcement, such as recognition and praise, as motivators for students and for maintaining appropriate actions (Cotton, 1988; Alter & Haydon, 2017). The literature has consistently demonstrated the effectiveness of reinforcement on increasing on-task behavior in students in various grade levels (Hardy & McLeod, 2020; Haydon et al., 2020).

A reward system not only encourages compliance and attention, but also gives an added boost to the executive function and self-regulation of learners (Aleman, 2024). Application of rewards is one of the factors that remarkably contribute to the academic achievement and change of the behavior of the students (Javed & Muhammad, 2021). Moreover, rewards do not have to be lavish to have an impact; even praise can serve as an effective stimulus for intrinsic motivation and suppress behavior problems (Cheng & Soo, 2022; Kuhfeld et al., 2022).

Based on the theory of positive reinforcement (Skinner, 1938), recognition is reward-oriented (Rogti, 2021). Their use in the learning situation has been known to enhance attention span, promote learning motivation and bring about a more focused classroom environment (Gbollie & Keamu, 2017; Chen, 2023). The expected positive affective experiences on receiving a reward, such as happiness, exhilaration, and acknowledgment, also enhance learners' motivation toward engagement and participation (Cheng & Soo, 2022).

In the same vein, the current study investigates how a reward-based classroom management app can effectively enhance students' on-task behavior at Pedro Acharon Sr. Central Elementary School. A qualitative explanatory single-case study design is used to learn from pre-service teachers who apply the reward system in their teaching behavior. Based on the pre-interview conducted by the researchers, 20 out of 42 pre-service teachers experienced difficulties managing learners' off-task behavior in the classroom. These challenges prompted the

researchers to develop an application designed to help improve learners' on-task behavior through a reward-based classroom management app called ON. By considering participants' experiences and perceptions, this research seeks to contribute to the growing literature depicting reward-based interventions as applied methods for managing classroom participation and behavior.

The literature supports the effectiveness of reward systems in enhancing students' motivation, engagement, and on-task behavior across various educational levels and contexts (Hardy & McLeod, 2020; Alter & Haydon, 2017; Javed & Muhammad, 2021). Studies highlight both the psychological and behavioral benefits of positive reinforcement, emphasizing its practical application in everyday teaching (Cheng & Soo, 2022; Rogti, 2021; Aleman, 2024). However, there has been limited research examining the factors associated with on-task behavior. Moreover, extensive international research exists on reward-based classroom strategies; no available local studies have been found that explore the effectiveness of a reward-based classroom management app implemented by pre-service teachers, particularly in the context of Pedro Acharon Sr. Central Elementary School. Additionally, no existing titles or investigations have been identified that mirror the specific focus and setting of this research. This gap highlights the need for localized, context-specific inquiry into how reward systems function when applied by pre-service educators, thereby addressing both theoretical understanding and practical classroom application in the Philippine setting.

II. METHOD

The study employed an explanatory single-case qualitative research design to examine the effectiveness of a reward-based classroom management device in improving learners' on-task behavior at Pedro Acharon Sr. Central Elementary School during the academic year 2025–2026. The participants were twenty (20) Bachelor of Elementary Education (BEEd) pre-service teachers undergoing practice teaching, whose experiences and perceptions served as the primary source of data. Semi-structured pre- and post-intervention interviews were used to explore classroom management challenges before the intervention, observe changes in learners' behavior after implementation, and identify the app features that promoted student engagement. The interview guide was validated by three experts, obtaining an overall mean score of 4.77 and perfect content validity indices ($I-CVI = 1.00$; $S-CVI = 1.00$). Data collection followed three phases: pre-intervention interviews, a 20-day implementation of the reward-based classroom management app, and post-intervention interviews. During implementation, each participant used the app at least five times in Individual Task mode and five times in Group Work mode, while researchers conducted classroom monitoring and provided support. Ethical procedures, including informed consent and confidentiality, were observed, and trustworthiness was strengthened through member checking, peer debriefing, an audit trail, and triangulation of interview data and classroom monitoring records.

III. RESULT AND DISCUSSION

RESULT

Table 1. *The challenges of the pre-service teachers in keeping the learners on task during class before the intervention.*

Sample Utterances	Code	Construct	Theme
<i>“Like imbis na mag tudlo man jud ka ma cut off na imong pag tudlo kay mas maka focus ka sa pag badlong”</i> <i>[Instead of continuing the lesson, my instructional time gets interrupted because you have to focus more on correcting behavior.] (P-1)</i> <i>“Maka affect sya sa akong time. Like imbes na kato nga time kay para sa akong pagtudlo ma kuan na nuon sya sa kuan sa pag-manage sa behavior sa bata.”</i> <i>[It affects my time. Instead of using that time for teaching, it gets spent on managing the students’ behavior.] (P-10)</i>	Instructional time gets interrupted	Instructional Time Loss due to Behavior Management	Difficulty in Managing Instructional Time Effectively
<i>“Daghan sila’y gusto buhaton, tapos ang uban sige’g lakaw-lakaw ana jud.”</i> <i>[They have a lot of things they want to do, and some just keep walking around.] (P-1)</i> <i>“They keep walking around the classroom.” (P-14)</i>	Keeps walking around	Difficulty in managing learners’ disruptive physical movement	Struggle in Managing Off-Task Behavior

<i>"They are not listening sa nagsasalita and they are keeping murmuring with their seatmates"</i> <i>[They are not listening to the speaker and they keep murmuring with their seatmates.] (P-15)</i> <i>"There was a time during the discussion when several learners were talking while I was explaining." (P-19)</i>	Talking		
<i>"Ang iba naga gahod sila ang iba naga behave lang" [Some students are noisy, while others are more well-behaved and just stay quiet.] (P-16)</i> <i>"Actually, in group activities, that's really when they become noisy and restless." (P-18)</i>	Noisy	Difficulty in managing irrelevant actions and classroom noise	
<i>" Mawala yung ano nila, ang focus nila during group activities, instead na maggawa sila ng task ma divert ang kanilang attention and focus sa unrelated things na gagawin."</i> <i>[Their focus tends to get lost during group activities. Instead of doing their assigned task, their attention is diverted and doing unrelated things.] (P-13)</i> <i>"Others were not paying attention and were doing unrelated things and it took time before I was able to regain their focus." (P-19)</i>	Doing unrelated things		
<i>"So uhmm handling grade 1 uhmm difficult man jud sya no labi nag kanang uhmm make them...focus on the lesson labi na naa ka sa part na discussion</i>	Lose focus	Difficulty in sustaining learners' focus and attention	Difficulty in Maintaining Learners' Attention

<i>na like ano na sya di na sila maminaw' [So, handling Grade 1 is really difficult to let them focus on the lesson, particularly during the discussion part. It's like they stop listening.] (P-2)</i> <i>"Malisudan sila mag focus, like lesson proper kay dghn kaaayo silag ginabuhay na dili nmo masabtan ug naunsa sila." [They also have difficulty focusing during the lesson proper because they are doing many things that I cannot fully understand or manage.] (P-9)</i>			
<i>"During my graded demo, uhhh regular teaching there is---it's very hard, it's very hard to catch the attention of the student, especially group activities na."</i> <i>[During my graded demo and regular teaching, it's really hard, it's very hard to catch the students' attention, especially during group activities.] (P-3)</i> <i>"Uhhh, one particular situation is during my discussion, uhh, maglisod jud ko mag-maintain sa ilaha para ma-maintain ilang focus"</i> <i>[Uhhh, one particular situation is during my discussion, I really find it difficult to maintain their attention.] (P-5)</i>	It's hard to catch and maintain their attention		
<i>"When the topic or lesson is difficult and they can't relate so they were like wla silay pake because they were not interested in the lesson or the</i>	Learners seem interested	Difficulty in engaging learners who easily lose interest	

topic.” <i>[When the topic or lesson is hard for them to understand or when they cannot relate to it. Because of this, they seem uninterested and appear not to care about the lesson or topic.] (P-8)</i> “Sa math naman ay parang ano parin, um may students pa rin na may interaction and mostly sa mga teacher na kasi mahirap kasi dahil abstract kasi yung math. So yun noh murag mawala gyud silag gana.” <i>[In Mathematics, there should still be interaction with the students, but for teachers, it is quite difficult because Math is abstract. So because of that, the students sometimes really lose interest.] (P-16)</i>			
“Kapag EPP talaga na subject ko kay ano man gud EPP boring man yan uy. If EPP sya taas kaayo ang discussion tapos more on talking ka lang talaga dyan ma ano gyud sila ma boringan gyud sila. “ <i>[When my subject is EPP, it tends to feel boring. The discussion is very long, and it’s mostly just talking, so the students really get bored.] (P-9)</i> “I think kuan ma bored sila sa kuan GMRC ug Makabansa, unya mag sige silag tabi sa ilang katapad.” <i>[I think they get bored in GMRC and Makabansa, and they just keep talking to their seatmates.] (P-10)</i>	Learners get bored		

<i>“Sa group task kay if ang iban dili magsali kay ang iban dili sila mag apil or mag participate.” [In group tasks, if some students do not participate, others also tend not to engage properly or join the activity.] (P14)</i> <i>“I think it is hard to keep learners on-task during group activities nila kasi some learners are not participating” [I think it is hard to keep learners on-task during group activities because some learners are not participating.] (P-15)</i>	Do not participate	Difficulty in managing cooperation during group work	Difficulty in Facilitating Collaborative Activities
<i>“Diba sa group activity kay dira nako na part malisdan I handle sila kay imbis na mag collaborate sila imbis na buhaton nila ilang specific task dili na sila mag ano mag participate” [In group activities, that’s the part where I find it hard to handle them because instead of collaborating they are not doing their specific tasks, they don’t really participate properly.] (P-2)</i>	Not doing their task		
<i>“Every group activity talaga kay naa mag adto sakoa sigeg sumbong sumbong kay naa daw dili mag share og answer ana jud like ingana.” [In group activities, during every group activity, there are really students who come to me to report or complain that someone is not sharing their ideas in group. It’s always like that.] (P-3)</i>	Not sharing ideas	Difficulty in facilitating idea-sharing and group understanding	
<i>“Pagka taod taod naga sumbaganay na sila kay dili</i>	They don't understand each		

<i>magkasinabot sa ilang ideas.”</i> <i>[After a while they start arguing with each other because they don’t understand each other’s ideas.” (P-7)</i>	other's ideas		
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Table 1 presents the challenges of the pre-service teachers in keeping the learners on task during class before the intervention. These are the four (4) final themes are: 1) Difficulty in Managing Instructional Time Effectively, 2) Struggle in Managing Off-Task Behavior, 3) Difficulty in Maintaining Learners’ Attention, and 4) Difficulty in Facilitating Collaborative Activities.

Table 2. *The observed behaviors of the class during class after the intervention.*

Sample Utterances	Code	Construct	Theme
<i>“So to describe my learners, they stayed focused especially uhmm before kasi they cannot behave kanang from time to time will remind them”</i> <i>[So to describe my learners, they stayed focused, especially compared to before when they could not behave and I had to remind them from time to time.]</i> <i>(P-4)</i> <i>“Most learners stayed focused because they wanted to earn points, and distractions were less compared to before.” (P-19)</i>	Stay focused	Improved learner focus and attentiveness	Improved Learner Attention and Participation
<i>“So they become more ano behave and attentive kay ga lantaw jud sila if dagdagan ilang points didtoa tam araba ilang pagka behave ana.”</i> <i>[The learners became more behaved and attentive because they were really watching if their points would increase, which improved their behavior.] (P-1)</i>	Attentive		

<i>"When the intervention was introduced, the class I handled became very attentive recently."</i> (P-5)			
<i>"I noticed that learners are participating in class, they are focusing sa gina discuss sa teachers and they are participating like naga raise na sila ng hand and they are sharing their ideas during the discussion para makakuha sila ng points."</i> [I noticed that learners are participating in class, focusing on the teacher's discussion, raising their hands, and sharing their ideas to earn points.] (P-15) <i>"So I've notice no that students become very participative sa classroom ah because kung magrerecite sila or they will ah do the activity ah really do the activity kay kanang bibigyan sila ng points"</i> [So I've noticed that students have become very participative in the classroom. When they recite or do activities, they really engage because they are given points] (P-16)	Participate	Improved learner participation and engagement	
<i>"They become very active and attentive with their classmates"</i> (P-8) <i>"So learners became more participative and active in class, and many of them were excited to answer and join the activities."</i> (P-19)	Active		
<i>"Uhhh, I observed that my class or my students really stay focus and behave during the group activity because uhhh nag expect</i>	Learners became more behave	Improved learner behavior and self-control	Improved Learner Classroom Behavior

<i>na sila na nay silay points everytime na mag behave sila, magparticipate sila."</i> <i>[Uhhh, I observed that my students stay focused and behave during group activities because they expect to receive points whenever they behave and participate.] (P-3)</i> <i>"The learners' behavior after the intervention was introduced, they became more and more participative and well as they became behaved"</i> <i>[After the intervention was introduced, the learners became more participative and well-behaved] (P-6)</i>			
<i>"May mga learners na sobrang nag improve at halos kuan hands on sila sa task nila."</i> <i>[There are learners who have improved a lot and are very hands-on with their tasks.] (P-11)</i> <i>"majority of the students improved greatly after the intervention." (P-13)</i>	The learners improved a lot		
<i>"Wala na sila ga balhin balhin og seat"</i> <i>[they no longer transfer seats.] (P-3)</i> <i>"Naga stay na sila sa bangko unlike before na sige silag balhin"</i> <i>[Stay in their seats, unlike before when they kept transferring from one place to another.] (P-18)</i>	Learners stayed in their assigned seats	Reduced disruptive behavior and unnecessary movement	

<i>"Dili na kaayo sila saba kaayo"</i> [They are less noisy] (P-18) <i>"Wala na sila ga saba saba kaayo"</i> [They were no longer very noisy.] (P-20)	Learners become less noisy		
<i>"During a group activity nakita ko na mas cooperative ang learners"</i> [During group activities, I saw that learners were more cooperative.] (P-11) <i>"naga cooperate na sila og naga answer na sa ilang teacher"</i> [They are already cooperating and answering their teacher] (P-18)	More cooperative	Improved learner cooperation and collaboration	Improved Learner Cooperation and Collaboration
<i>"I notice that my student they uhmm they become more interest and participative during the activities na ano pod nag collaborate sila"</i> [I noticed that my students became more interested and participative during the activities, and they also collaborated with each other] (P-3) <i>"Napansin ko na ang learner lay gusto gid nila mag participate and willing gid sila makipagcollaborate kay especially kay alam nila na may reward sila na matnggap."</i> [I noticed that learners really want to participate and are willing to collaborate, especially because they know they will receive rewards] (P-9)	Learners demonstrate willingness to collaborate		

Table 2 presents the observed behavior of the learners during class after the implementation of the intervention. These three (3) themes are: 1) Improved Learner Attention and Participation, 2) Improved Learner Classroom Behavior, and 3) Improved Learner Cooperation and Collaboration.

Table. 3 *The features of a reward-based classroom management app that influence the improvement of the on-task behavior of the learners.*

Sample Utterances	Code	Construct	Theme
<i>"Ma ano jud nimo sila maging competitive sila because of the points"</i> <i>[They really become competitive because of the points] (P-1)</i> <i>"So ang rewards parehas aning points og badge really increase their motivation."</i> <i>[So rewards like points and badges really increase their motivation.] (P-4)</i>	Points	Point, Leaderboard, Reward, And Badge Features That Increased Learner Motivation And Participation	Reward and Recognition Features that Improved Learners' On-Task Behavior
<i>"Ang leaderboard man jud ang mga bata ahh mag behave ko ani dapat maminaw ko kay teacher dapat ma top one ko ana jud maging competitive sila"</i> <i>[The leaderboard really motivates the students because they think, 'Ahh, I should behave, I should listen to the teacher because I want to be top one.] (P-1)</i> <i>"First in the leaderboards, so students really like competition, so they are competitive student and it really ano and it really had an impact on them in participating more and behaving well"</i> <i>[So, the things that you mentioned influenced the students' behavior by motivating them to aim for first place on the leaderboard. Students really enjoy</i>	Leaderboard		

competition, so they became more competitive, and it truly had an impact on their participation and behavior.] (P-6)			
“very ano talaga siya very interactive and nice app gyud sila lalo na avatar.” [It is really a nice app because it is very engaging, especially with the avatars.] (P-18) “Tapos ma excite sila sa nawong sa ilang pato kay tungod cute kaayo tapos colorful. tapos ganahan sad sila sa mga animation kay nagalihok lihok sila.” [They also get excited seeing their avatar because it is very cute and colorful. They also like the animations because they are moving, which makes the app more engaging for them.] (P-20)	Avatar	Avatar and customization features that increased learner engagement	
“naa pa gyud tong additional if makaabot silag 5 points kay makakuha sila accessories sa ilang avatar, maong mamotivate sila” [There is also an additional feature where, if they reach 5 points, they can get accessories for their avatars, which really motivates them.] (P-7) “Nahimo silang motivated pagmakakuha silag watches, hats and uban pa..” [They get motivated to collect tems like watches, hats, and others.] (P-15)	Accessories		
“Hawod jud sya kay pambata jud sya for grade 1 maganahan sila.”	Child-friendly	Colorful, animated, and child-friendly	Interactive Learning Features

<i>[It is really designed for children, especially Grade 1 earners] (P-1)</i> <i>“Since it is hosted or displayed on the TV and the design of the app is very vibrant and very child-friendly.”</i> <i>[Since it is hosted or displayed on the TV, and the design of the app is very vibrant and child-friendly] (P-5)</i>		features that increased learner engagement	that Improved Learners’ Participation and Engagement
<i>“Yung simple at colorful design ng app nakatulong para mamaintain yung attention ng learners” [The simple and colorful design of the app helped maintain the learners’ attention.] (P-11)</i> <i>“Tapos maexcite sila sa nawong sa ilang pato kay tungod cute kaayo tapos colorful.” [They also get excited seeing their avatar because it is very cute and colorful.] (P-20)</i>	Colorful		
<i>“When they see the feedback they automatically mag behave sila.” [the children can immediately see the feedback. And when they see the feedback, they automatically behave] (P-2)“Then napansin nako every time naay feedbacking pagmaghatag og points” [I also noticed that during feedback and giving of points, they really behave well.] (P-20)</i>	Feedback	Group activity, individual task, and feedback features that supported active learning	
<i>“.....group work kay naay reward system that is specified for that.” [.....group work, there is a specific reward system assigned for each activity.] (P-8)</i>	Group activity		

<i>“The features of the reward system is the app use point system for behavior of groupwork” [The features of the reward system in the app include a point system for behavior, group work] (P-19)</i>			
<i>“Uuhhh, the features in the reward-based app is very simple, easy to use” [Uhh, the features in the reward-based app are very simple, easy to use] (P-5)</i> <i>“Madali syang gamitin at helpful sya sa pagtrack ng progress ng learners.” [It is easy to use and helpful in tracking the earners’ progress.] (P-11)</i>	Easy to use	Easy navigation and usability features that supported classroom management	User-Friendly Features that Improved Classroom Management Efficiency
<i>“Siguro mas hawod gyud if ang app kay pwede ra sa cp para easy to use nalang kanang mag pindot na lang og dali ra inavigate” [It would be better if the app is used only on mobile phones since it is easy to use—you just click and navigate it easily.] (P-7)</i> <i>“easy to use lang siya dahil clickable ng madali lang mag load ba, easy lang din yung mga parts ng site.” [it is very easy to use because it is clickable, loads easily, and the different parts of the site are simple to navigate.] (P-14)</i>	Navigation		

Table 3 represents the features of a reward-based classroom management app that influence the improvement of the on-task behavior of the learners. These are the three (3) final themes: 1) Reward and Recognition Features that Improved Learners’ On-Task Behavior, 2) Interactive Learning Features that Improved Learners’ Participation and Engagement, 3) User-Friendly Features that Improved Classroom Management Efficiency.

Table 4.
Pattern causation from the Relationship

The challenges of the pre-service teachers in keeping the learners on task during class before the intervention	The features of a reward-based classroom management device that influence improving the on-task behavior of the learners.
Theme 1: Difficulty in Maintaining Learners' Attention	Theme 2: Interactive Learning Features that Improved Learners' Participation and Engagement
Theme 3: Difficulty in Facilitating Collaborative Activities	
Theme 2: Struggle in Managing Off-Task Behavior	Theme 1: Reward and Recognition Features that Improved Learners' On-Task Behavior
Theme 4: Difficulty in Managing Instructional Time Effectively	Theme 3: User-friendly features that improved efficiency

Table 4 presents the patterns of causation showing the relationship between the challenges encountered by pre-service teachers in keeping learners on task before the intervention and the features of the reward-based classroom management app that helped improve learners' on-task behavior. These patterns are: 1) Interactive Learning Features that Improved Learners' Participation and Engagement addressing Difficulty in Maintaining Learners' Attention, 2) Interactive Learning Features that Improved Learners' Participation and Engagement addressing Difficulty in Facilitating Collaborative Activities, 3) Reward and Recognition Features that Improved Learners' On-Task Behavior addressing Struggle in Managing Off-Task Behavior, and 4) User-Friendly Features that Improved Classroom Management Efficiency addressing Difficulty in Managing Instructional Time Effectively.

DISCUSSION

The findings of the study revealed that pre-service teachers experienced challenges in keeping learners on task before the implementation of the intervention. Difficulties were encountered in managing instructional time, controlling off-task behaviors, maintaining learners' attention, and facilitating collaborative activities. Learners frequently displayed inattentiveness, excessive talking, unnecessary movement, and limited participation, which disrupted lesson flow and reduced opportunities for meaningful instruction. These findings support the literature that emphasizes the importance of effective classroom management in maintaining learner engagement and participation. Classroom disruptions and distractions have been found to negatively affect instructional effectiveness, learner engagement, and learning opportunities when not properly managed (Turan, 2020; Ozen & Yildirim, 2020; Nagro et al., 2020).

Following the implementation of the reward-based classroom management app, pre-service teachers observed improvements in learners' attention, participation, classroom behavior, and collaboration. Based on their classroom observations, learners appeared more attentive during lessons, participated more actively in discussions and activities, demonstrated improved behavior, and showed greater cooperation during group work. These findings align with studies indicating that

on-task behavior is reflected through learners' focus, participation, engagement, and appropriate classroom conduct (Mahar, 2019; Fiveable, 2024). Similarly, active participation in discussions, answering questions, and engaging in classroom tasks are recognized indicators of improved on-task behavior (Lane et al., 2020; U-TECH Professional Development, 2025).

The improvements in learners' behavior and engagement may be attributed to the app's reward and recognition features, interactive learning features, and user-friendly design. The use of points, badges, rewards, leaderboards, avatars, and immediate feedback motivated learners to participate actively, follow classroom rules, and remain focused during classroom activities. This supports previous studies which found that reward systems and token economy strategies effectively increase learner motivation, engagement, and positive classroom behavior through reinforcement (Maggin et al., 2021; Li, 2022; Hardy & McLeod, 2020). Furthermore, rewards and recognition encourage learners to repeat desirable behaviors, while positive reinforcement strengthens classroom participation and rule-following behavior (Alter & Haydon, 2017; Iskandar, 2024).

The findings also suggest that the app's interactive and visually engaging features contributed to sustaining learners' attention and participation. The colorful visuals, animations, avatars, and child-friendly design captured learners' interest and encouraged active involvement during classroom activities. This supports studies highlighting that engaging learning environments, visual feedback, and interactive classroom tools help maintain learners' attention, increase motivation, and promote active participation in learning tasks (Sari & Yudi, 2019; Chen, 2023; Kuhfeld et al., 2022; Yu et al., 2023).

Moreover, the pattern causation analysis demonstrated that the app's features directly addressed the challenges experienced by pre-service teachers before the intervention. Interactive learning features helped address difficulties in maintaining attention and facilitating collaborative activities, reward and recognition features reduced off-task behavior, and user-friendly features improved classroom management efficiency and instructional time management. These findings are consistent with literature suggesting that reinforcement-based classroom management applications and behavior-monitoring tools support positive learner behavior, improve classroom management practices, and reduce the burden of behavior management on teachers (Mora, 2020; Aleman, 2024; Maggin et al., 2021). Overall, the findings indicate that the reward-based classroom management app effectively improved learners' on-task behavior while helping pre-service teachers manage classroom challenges more efficiently.

IV. CONCLUSION

Based on the findings of this study, the following conclusions were drawn:

1. Pre-service teachers experienced various classroom management challenges prior to the intervention, including difficulties in maintaining learners' attention, managing off-task and disruptive behaviors, facilitating collaborative activities, and maximizing instructional time effectively. These challenges negatively affected learners' on-task behavior, participation, and overall classroom engagement, which hindered the teaching and learning process.
2. The implementation of the reward-based classroom management application was perceived by pre-service teachers to contribute to improvements in learners' behavior, attention, participation, and engagement. Based on their observations, learners appeared to become more cooperative, responsive to instructions, actively involved in classroom activities, and more consistent in completing assigned tasks, which contributed to a more positive and productive classroom environment.

3. The features of the reward-based classroom management application significantly contributed to these behavioral improvements. The reward and recognition system increased learners' motivation and encouraged positive behavior, while the interactive learning features enhanced engagement and sustained attention. Additionally, the user-friendly design supported smoother classroom management by reducing disruptions and improving instructional efficiency.
4. There was a clear alignment between the classroom management challenges experienced by pre-service teachers and the features of the application. The interactive features addressed difficulties in maintaining attention and collaboration, the reward system reduced off-task behaviors by promoting participation and self-regulation, and the user-friendly features improved instructional time management. This alignment indicates that the intervention effectively addressed the specific classroom management challenges encountered by pre-service teachers.

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