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IAIN Syaikh Abdurrahman Siddik Bangka Belitung, Indonesia

IMPLEMENTATION OF THE ACTION RESEARCH CYCLE ON MENTAL TRAINING FOR YOUNG BASEBALL ATHLETES

Uswatun Hasanah*
Faculty of Psychology, Universitas Negeri Jakarta, Indonesia
Email: 22uswahsnh@gmail.com

Juriana
Faculty of Sports Science, Universitas Negeri Jakarta, Indonesia
Email: juriana@unj.ac.id

Deasyanti
Faculty of Psychology, Universitas Negeri Jakarta, Indonesia
Email: deasyanti@unj.ac.id

Lussy Dwiutami Wahyuni
Faculty of Psychology, Universitas Negeri Jakarta, Indonesia
Email: lussysf@unj.ac.id

Abstract
The development of young athletes requires serious attention to mental aspects, including in baseball. They need to receive mental training from an early age to maintain their motivation to participate and practice sports. This study aims to determine the effectiveness of goal-setting training in increasing the motivation of young baseball players under the age of 16 who are trained by local governments. This method uses a three-cycle action research design to observe the gradual increase in athlete motivation to determine increase in athlete motivation. The instrument used is the Intrinsic Motivation Inventory (IMI) questionnaire (McAuley et al., 1989), which consists of four aspects, with the following reliability coefficients: interest-enjoyment (r=0.78); perceived competence (r=0.80); effort-importance (r=0.84); and tension-pressure (r=0.68). The results of the study in cycle I showed an increase in motivation from a score of 71.61 (86.28%) to 73.94 (89.09%). The results of cycle II showed an increase in motivation scores to 75.89 (91.43%), and the results of cycle III showed an increase in motivation scores to 76.22 (91.83%). Thus, it can be concluded that mental training interventions in the form of goal-setting exercises have succeeded in increasing the motivation of baseball athletes. More holistic mental training is needed to improve the mental skills of baseball athletes in the future.

Keywords: *Action Research Cycle, Baseball Athletes, Mental Training, Motivation, Young Athletes*

* *Corresponding Author*

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Abstrak

Pembinaan atlet muda memerlukan perhatian serius pada aspek mental, termasuk dalam olahraga baseball. Mereka perlu menerima pelatihan mental sejak usia dini untuk menjaga motivasi mereka dalam berpartisipasi dan berlatih olahraga. Penelitian ini bertujuan untuk mengetahui efektivitas pelatihan penetapan tujuan dalam meningkatkan motivasi atlet baseball muda di bawah 16 tahun yang dilatih oleh pemerintah daerah. Metode ini menggunakan desain penelitian tindakan tiga siklus untuk mengamati peningkatan motivasi atlet secara bertahap untuk mengetahui peningkatan motivasi atlet. Instrumen yang digunakan adalah kuesioner Intrinsic Motivation Inventory (IMI) (McAuley et al., 1989) yang terdiri dari empat aspek, dengan koefisien reliabilitas berikut: minat-kenikmatan (r=0,78); kompetensi yang dirasakan (r=0,80); upaya-pentingnya (r=0,84); dan ketegangan-tekanan (r=0,68). Hasil penelitian pada siklus I menunjukkan peningkatan motivasi dari skor 71,61 (86,28%) menjadi 73,94 (89,09%). Hasil siklus II menunjukkan peningkatan skor motivasi menjadi 75,89 (91,43%), dan hasil siklus III menunjukkan peningkatan skor motivasi menjadi 76,22 (91,83%). Dengan demikian, dapat disimpulkan bahwa intervensi pelatihan mentals berupa latihan penetapan tujuan telah berhasil meningkatkan motivasi atlet baseball . Pelatihan mental yang lebih holistik diperlukan untuk meningkatkan keterampilan mental atlet baseball di masa mendatang.

Kata kunci: *Penelitian Tindakan, Atlet Baseball, Pelatihan Mental, Motivasi, Atlet Muda*

INTRODUCTION

The development of young baseball athletes in developing countries, including Indonesia, remains minimal. However, the development of baseball communities and competitions in various cities and regions demonstrates significant potential for continued development. The lack of a structured development system poses a significant challenge to athlete performance. The lack of a tiered baseball development system means athletes must navigate the ups and downs of their training to improve performance. A more organized system is expected to improve training effectiveness, increase athlete motivation, and support sustainable performance growth. In efforts to improve baseball athlete performance, psychological aspects such as intrinsic motivation are crucial factors that are often overlooked.

This motivation is crucial in encouraging athletes to continue training with discipline, improve their skills, and achieve their best performance, even when the training system is lacking. Intrinsic motivation refers to the internal drive that comes from within an individual to engage in an activity because they feel interested, satisfied, or have personal goals they want to achieve. In the context of sports, intrinsic motivation can drive athletes to train consistently, develop skills, and persist in the face of challenges, even when there are no direct external rewards provided. (Arifin & Wahyudi, 2023.) Previous research by Arifin and Wahyudi (2023) showed that motivation is one of the key factors in athlete performance. Intrinsic motivation in the context of sports refers to the internal drive that makes individuals

engage in sports activities because they feel happy, challenged, and personally satisfied, rather than because of external rewards. (McAuley et al., 1989).

Intrinsic motivation refers to the internal drive to participate in an activity because it is enjoyable, interesting, or challenging. It is crucial for an athlete's sustainability and progress. (Ryan & Deci, 2020). Behavior driven by intrinsic motivation brings satisfaction and enjoyment, helping maintain consistency and enthusiasm in an athlete's training. One tool often used to measure intrinsic motivation in sport is the Intrinsic Motivation Inventory (IMI), which assesses key areas such as interest/enjoyment, perceived competence, effort/choice, and value/usefulness. All of these dimensions contribute to an athlete's engagement and performance.

Athlete motivation in sports and athlete development lies in the collaboration of various elements. The collaboration of physical, technical, and mental aspects shapes the training currently undertaken by athletes (Sutoro et al., 2023). An athlete's development and success depend not only on physical and technical abilities, but also on mental strength. Previous research has shown that qualities such as self-confidence, resilience, and the ability to overcome challenges are crucial for success.

Therefore, creating a structured mental training program is crucial in developing intrinsic motivation in athletes. This program should include psychological strategies such as goal setting and positive feedback. Goal setting by Locke and Latham (2002) showed that conscious goal setting can improve performance, and research shows that mastery-oriented goals significantly increase athlete motivation. (Jeong et al., 2023). A better training system can help athletes develop intrinsic motivation, which is vital for achieving peak performance in sports. Mastery-oriented goals significantly increase athlete motivation. (Noordzij et al., 2021). Meanwhile, other studies (Jannah et al., 2022) have revealed that intrinsic motivation plays a crucial role in maintaining student athletes' enthusiasm for continued achievement.

Goal setting plays a crucial role in motivating athletes to achieve better results. The more specific the goals, the greater the athlete's drive to achieve. Goal setting (Fachrezi et al., 2023) involves processes applicable to sports psychology, such as preparation, goal setting, planning, and follow-up. Goal setting should be applied dynamically, individually, and contextually, with the process providing an overview.(Bird et al., 2024)

In an unstructured system, goal setting serves as a foundation that provides direction and focus for the intervention process, ensuring that athletes and coaches have a clear understanding of the desired goals. Furthermore, specifically and meaningfully formulated goals can increase intrinsic motivation and commitment among athletes to the mental training program. Goal setting also allows for the creation of indicators that can be used to systematically monitor and evaluate progress, allowing for objective

measurement of the intervention's effectiveness. Goal-based mental training not only addresses systemic deficiencies but also strengthens the psychological and behavioral aspects that support optimal performance in adolescent athletes.

PARADIGM, APPROACHES, THEORIES, AND LITERATURE REVIEW

Mental training aims to develop athletes' psychological skills so they can achieve optimal performance and maintain mental balance. The approach used in mental training utilizes a cognitive-behavioral (CBT) approach in sports psychology, which focuses on how thoughts (cognitive) influence an athlete's behavior. Goal setting in CBT emphasizes directing focus on technical aspects, providing internal motivation, and increasing persistence in the face of challenges (Weinberg & Gould, 2019). The CBT approach, through goal setting, transforms negative thought patterns into positive, goal-oriented ones, helping athletes set specific, challenging, and realistic goals.

Mental training has been extensively researched throughout the development of major sports (Zengin & Kirkbir, 2020). From studies of elite athletes to those of novice athletes, the effects of training have been shown to have a positive impact on overcoming physical and psychological barriers (Biçer, 2018). The purpose of this article is to propose mental training for developing athletes to influence their mental characteristics. Mental health, including emotional, psychological, and social well-being, is a key focus of mental training (Vealey, 2024).

Mental training supports the motivational needs of athletes in high-performance sports. Motivation in psychology involves understanding an individual's natural desires and control over their choices, thereby fostering internal values (Hamzah et al., 2025). Previous research has shown that intrinsic motivation has a positive correlation with consistent training and performance (Wijaya & Avandi, 2025). Similar to previous research, intrinsic motivation in elite athletes has a positive relationship with athletic performance (Hamzah et al., 2025).

In this study, an action research approach provided athletes with a deeper understanding of mental training, allowing them to observe its implementation process. The mental training was conducted through action research to further examine the research results, which were then evaluated. The implementation process was conducted through discussions with the coaches.

The results of the current needs in baseball are related to the goal-setting process for athletes in achieving their goals. The technique used in this study is goal setting, which is used to direct attention, increase motivation, and shape behaviors that support optimal performance. According to Locke and Latham's (1990) Goal-Setting Theory, specific and challenging goals accompanied by feedback will result in higher performance than goals that are unclear or too easy.

Previous research has demonstrated the influence of athlete performance on achievement motivation (Sofiatul, 2023). Several studies have emphasized the importance of developing mental skills, such as implementing programs to improve athletes' mental health. This approach focuses on mental training patterns undertaken to build mental skills (Vealey, 2024). This research strengthens self-determination theory within the intrinsic motivation approach to athlete development.

METHOD

This study uses action research, which aims to increase the intrinsic motivation of baseball athletes. Through mental rehearsal with goal-setting interventions. Action research, following the Kemmis & McTaggart (1988) model, is used as a systematic approach consisting of four stages: planning, action, observation, and reflection. (Rahayu, 2016). These four cycles are repeated after reflection back to the planning stage to improve subsequent actions.

This approach is highly effective in educational settings, aiming to address teaching and learning issues and improve the quality of education. This action research was conducted so that researchers could systematically conduct training and evaluate its impact. The research design followed the Kemmis and McTaggart model, which consists of four stages: planning to develop actions based on identified problems, action to implement the planned interventions or changes, observation to monitor and record the impact of the actions taken, and reflection to evaluate the results of the actions and plan improvements for the next cycle.

This research was conducted in three cycles to ensure the effectiveness of the intervention on athletes. Action research was conducted to achieve continuous improvement in athletes through reflective actions undertaken in each cycle. The action research process involves repeated cycles. Each cycle builds on the previous one, allowing for continuous refinement of strategies and practices (Prihantoro & Hidayat, 2019).

Qualitative and Quantitative Data Collection: Various methods were used to collect data, including observations, interviews, surveys, and assessments. This data was analyzed to evaluate the effectiveness of the intervention and inform the next cycle (Bankauskiene & Masaitytė, 2019).

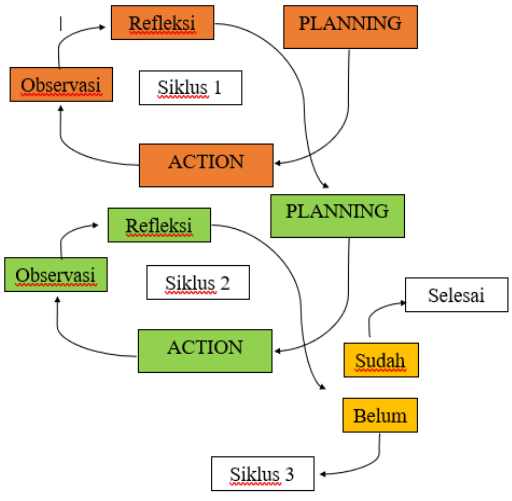

Figure 1. *Action Research Cycle*

Action research in athlete mental training is conducted through a cycle of observation, reflection, planning, and action. The initial stage begins with

observation, where researchers identify the psychological conditions and mental needs of adolescent athletes during training or competition. The collected data is critically analyzed during the reflection stage to identify any mental issues experienced by the athletes.

Through this contemplation, researchers design a customized mental training intervention program, such as relaxation exercises, visualization, or mental strengthening. These interventions are then implemented during the action phase, actively engaging the athletes in the developed mental training. After the intervention is delivered, additional observations are conducted to evaluate its impact on the athletes' performance and mental state. If the results are unsatisfactory, the cycle continues with strategy adjustments based on the new reflections.

This cycle continues until significant improvements in the mental readiness and performance of young athletes are achieved, and action research is established as an effective and contextual approach to mental sports development.

Research Instruments

The instrument used in data collection in this study was a pre- and post-test questionnaire on intrinsic motivation using a Likert scale. The Likert scale consists of 1-5 options as follows:

SS : Strongly Agree = 5
S : Agree = 4
R : Neutral = 3
TS : Disagree = 2
STS : Strongly Disagree = 1

The research instrument used was the Intrinsic Motivation Inventory (IMI) by McAuley et al. (1989), which focuses on four dimensions: interest/enjoyment, perceived competence, effort/choice, and value/utility. By using these four dimensions,

Table 1
Dimensional Instruments

No.	Dimensions	Number Problems
1	Interest-Enjoyment	1,2,3,4,5
2	Perceived Competence	6,7,8,9,10
3	Effort-Importance	11,12,13,14
4	Tension-Pressure	15,16,17,18

RESULTS AND DISCUSSION

Result

This study obtained data from 18 baseball athletes from the DKI Jakarta *Sustainable Achievement Sports Development (POPB)*, as listed in the Athlete Certificate. The results of the questionnaire instrument and observations of athlete activities during the intervention were obtained. Previous data showed the reliability of the Intrinsic Motivation Inventory-IMI (McAuley et al., 1989), which consists of four aspects with the following reliability coefficients: interest-enjoyment (r = 0.78); perceived competence (r = 0.80); effort-importance (r = 0.84); and tension-pressure (r = 0.68). This instrument has good reliability.

This instrument was used through a goal-setting intervention with three cycles of action research on baseball athletes. The data description in this study includes

the highest score, the lowest score, and the average score at the beginning and end of the cycle as follows:

Table 2
Research Data Description

Variables	Pre-Test	Post Test 3
The tallest	83	90
Lowest	62	63
Average	71.61	76.22

Researchers can determine the increase in intrinsic motivation scores among athletes after the implementation of a mental training goal-setting program. The mental training program conducted by the researchers aimed to observe the increase in intrinsic motivation among baseball athletes using a goal-setting intervention with action research over three cycles.

Initial and Final Motivation Measurement

The data collected on the intrinsic motivation variable in the pre-test showed a range of values from 83 to 62, with an average score of 71.61 and a total of 1,289. The post-test in cycle 3 showed a range of values from 90 to 63. The average score was 76.22, and the total number of participants was 1,372.

Cycle 1

a) Planning stage: Researchers prepare tools and places for the intervention.
b) The activity and implementation phase: conducted in the VVIP room at the Rawamangun Baseball Field in Jakarta. The intervention included initial education for parents and athletes, as well as an explanation of goal setting.
c) Evaluation Stage: Researchers evaluated the tilted seating arrangement, making it difficult to see the projector screen clearly, resulting in some athletes not being visible.

At the end of cycle 1 of the mental training intervention, the athletes were given an intrinsic motivation questionnaire to assess their success in the mental training goal-setting program. Post-test results for cycle 1 showed an increase of 2.33. Motivation scores increased from 71.61 (86.28%) to 73.94 (89.09%).

Cycle 2

a) Planning stage: researchers prepare supporting tools and facilities, evaluate cycle 1 for planning cycle 2.
b) Activity and implementation phase: Conducted in the Rawamangun Baseball Field's auditorium and stands, Jakarta, these physical changes resulted in better athlete engagement and focus on the material and practice. The material was taught indoors, and practice was conducted in the stands. The intervention process began with a review of Cycle 1 by the researcher and observation of the athletes.
c) Evaluation Stage: Research in Cycle 2 does not repeat the evaluation

from Cycle 1. Interventions are implemented through games and materials.

At the end of the mental training intervention in Cycle 2, athletes were given an intrinsic motivation questionnaire to assess their success in the mental training goal-setting program. Improved seating arrangements allowed athletes to pay better attention. Post-test results for Cycle 2 showed a 4.28 improvement. Intrinsic motivation scores increased to 75.89 (91.43%).

Cycle 3

a) Planning stage: researchers prepare supporting tools and facilities, evaluate cycle 2 for planning cycle 3. Maintain materials and practices for athletes to intervene carried out fun.
b) Activity and implementation phase: conducted at the Rawamangun Baseball Field, Jakarta. Cycle 1 and 2 reviews were conducted to review the material with the athletes. Initial interventions included evaluating measurable and specific goal setting using the SMART (Specific, Measurable, Achievable, Relevant, and Time-bound) method.

At the end of Cycle 3, it was found that the average score of athletes reached 4.61. The motivation score increased to 76.22 (91.83%). These results indicate an increase in the intrinsic motivation of athletes through the mental training goal-setting intervention program. The smallest quantitative increase of 0.33 in this action research in cycle 2 got 75.89 (91.43%), to cycle 3 got 76.22 (91.83%). This intervention reached a peak in the SMART focus, which did not produce too big an effect in cycle 2 to cycle 3. The program that was run could improve the evaluation in the previous cycle, but had not been well scheduled, the ice breaking part that could make athletes relax and comfortable during the break, in providing intervention to athletes.

Discussion

The study results indicate that a systematic goal-setting intervention can increase intrinsic motivation in young baseball athletes. Scores on the Intrinsic Motivation Inventory (IMI) scale reflected this improvement. After each cycle of the intervention, scores showed a positive trend. These findings support Self-Determination Theory (Deci & Ryan, 1985), which states that intrinsic motivation develops when individuals perceive autonomy, competence, and social connectedness in their activities.

The intervention used the SMART (Specific, Measurable, Attainable, Relevant, and Time-bound) Goals approach to guide athletes in setting their personal and systematic goals. Research has shown that this approach is effective in helping athletes understand their training direction and feel more accountable for their personal achievements. Athletes who were previously passive in training began to reflect on their own performance, showing enthusiasm and initiative.

Competence improvements may occur because athletes use systematic and structured goal-setting methods, which

can increase self-confidence and achievement. This finding aligns with Goal-Setting Theory developed by Locke and Latham (1990). According to this theory, specific and challenging goals accompanied by feedback lead to higher performance than vague or easy goals.

CONCLUSION

In this study, athletes with clear and measurable goals demonstrated increased engagement in training. Their intrinsic motivation also increased. They felt more motivated because they had concrete direction and achievements to celebrate. The coach acted as both a facilitator and a source of external motivation. The social support provided by the coach further strengthened the athletes' internal motivation.

Mental training interventions explicitly target goal-setting skills through the SMART approach, which allows athletes to set specific and measurable goals. This process not only increases motivation and focus but also strengthens the perceived competence dimension, as athletes can systematically monitor and evaluate their achievements. Therefore, analysis of the intervention's impact needs to consider changes in specific psychological dimensions, not just overall improvement in scores.

However, this study has several limitations. First, the sample size was relatively small and homogeneous, consisting of baseball athletes aged 10–14 years. This limits the generalizability of the results to a broader population. Second, the limited duration of the intervention was insufficient to measure the long-term impact of goal setting on athletes' motivation and performance over a single training season.

Further research is recommended to expand the scope of the study to other age groups and sports disciplines. Furthermore, it is recommended to integrate the goal-setting approach with other psychological training strategies, such as visualization and *self-talk*. Furthermore, longitudinal measurements can provide a more comprehensive picture of the stability of intrinsic motivation over a longer period. Future recommendations include designing a more balanced schedule of materials and icebreakers to ensure athletes' relaxation during interventions, which will further analytical thinking in this area of action research.

In essence, this research provides practical contributions in the field of early childhood sports training, particularly in designing training programs that focus on improving motivation, character, and performance in young athletes.

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