Coaching with Purpose:
Integrating Self-Determination Theory (SDT) into Sports Coaching Styles

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ABSTRACT

The "Coaching with Purpose: Integrating Self-Determination Theory (SDT) into Sports Coaching Styles" Program bridges critical gaps in traditional coaching by emphasizing autonomy, competence, and relatedness, thereby fostering intrinsic motivation and psychological well-being in athletes (Deci & Ryan, 2000; Ryan & Deci, 2017). Delivered asynchronously, the program integrates theoretical foundations with practical applications, including reflective exercises, case studies, and interactive modules, aligning with best practices in adult learning (Knowles, 1980).

Evaluative data, comprising pre- and post-program surveys, coaching observations, and statistical analyses, revealed significant advancements in participants' adoption of SDT principles. Post-program results demonstrated an 85% increase in the use of autonomy-supportive practices, highlighting the Program's success in transitioning participants from directive approaches to athlete-centered strategies (Hagger & Chatzisarantis, 2007). However, challenges in balancing autonomy with structured coaching underscore the need for continued mentorship and professional development (Amorose & Anderson-Butcher, 2007).

Participants praised the program's focus on empowering athletes and integrating psychological growth with performance, suggesting its applicability across diverse sports contexts. This initiative illustrates how SDT-aligned Programs can enhance athlete motivation, satisfaction, and long-term development. Future research should examine the Program's broader impact on athlete retention, performance, and mental health within varied sports environments (Durlak et al., 2011).

Keywords: Self-Determination Theory (SDT), Autonomy-Supportive Coaching, Athlete Motivation, Sports Coaching Strategies.

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Introduction/Rationale for Project

Traditional coaching methods often rely on authoritarian and hierarchical structures, which can inadvertently foster dependency rather than autonomy, leading to decreased motivation and engagement (Reinboth, Duda, & Ntoumanis, 2004; Curran et al., 2016; Bartholomew, 2011). Moreover, the lack of autonomy and support in these environments can diminish athletes' psychological well-being, contributing to heightened anxiety and stress (Hagerty & Felizzi, 2023). Recognizing these limitations, contemporary sports coaches are increasingly adopting SDT principles. SDT emphasizes fulfilling athletes' intrinsic needs for autonomy, competence, and relatedness, thereby enhancing motivation, well-being, and performance (Deci & Ryan, 2000; Flannagan, 2019; Goltsman, 2023).

However, fewer than 10% of middle and high school coaches receive formal training, leaving many ill-equipped to support student-athletes effectively (Knight, 2020). This lack of preparation can result in coaches overlooking the motivational struggles of adolescent athletes, potentially leading to attrition in sports. The asynchronous program *Coaching with Purpose: Integrating SDT into Sports Coaching Styles* seeks to address this gap by providing coaches with practical tools to incorporate SDT principles into their coaching practices. The Program aims to improve athletes' satisfaction, mental health, and training environments while fostering positive coach-athlete relationships based on trust, communication, and mutual respect (Deci & Ryan, 2000).

To achieve these goals, this study addresses the following research questions:

1. **How effectively do participants integrate SDT principles into their coaching practices after completing the program?**

2. **What observable changes occur in participants' coaching styles, particularly in fostering autonomy, competence, and relatedness?**

3. **What are the perceived challenges and benefits of implementing SDT principles in diverse coaching contexts?**

4. **How do participants perceive the structure and delivery of the program material?**

5. **What were the overall satisfaction levels of participants with the program content and delivery?**

6. **What changes did participants implement in their approach to athlete skill development post-program?**

7. **What challenges did participants encounter in implementing SDT principles in their coaching?**

Through these research questions, the study aims to evaluate the efficacy of the program, identify areas for improvement, and provide actionable recommendations for advancing autonomy-supportive coaching practices in youth sports. The Program emphasizes the practical application of SDT principles, ensuring that coaches understand the theory and know how to apply it in real-world situations. Through interactive,

reflective, and observational activities, participants are encouraged to evaluate their current coaching practices and identify areas for improvement. This process supports their transition from traditional, control-focused methods to a more athlete-centered approach that promotes autonomy and personal development. A key element of the Program is its focus on relationship-building. Research shows that athletes who feel connected to their coaches are more likely to stay engaged and motivated (Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2011). The program prioritizes communication and mutual respect to strengthen these connections, creating an environment where athletes feel supported and empowered to achieve their potential.

Additionally, the Program addresses the mental health challenges associated with traditional coaching methods. Coaches are trained to recognize signs of stress and anxiety in their athletes and to respond with strategies that promote well-being. This includes integrating techniques from Social-Emotional Learning Theory (SEL) to help athletes manage emotions, build resilience, and enhance both performance and personal growth (Durlak et al., 2011).

Learning Design

The program is designed to be flexible and accessible, catering to the busy schedules of middle and high school coaches. It consists of four modules delivered asynchronously, allowing participants to learn at their own pace. The program incorporates diverse instructional methods, including case studies, discussions, and practical exercises, enabling coaches to balance professional responsibilities while gaining valuable knowledge and tools to enhance their coaching practices.

This Program addresses gaps in traditional coaching approaches by equipping coaches with the skills to meet their athletes' psychological needs, fostering a more supportive and effective coaching culture. By focusing on Self-Determination Theory (SDT), the program helps coaches transform their approach to athlete development, emphasizing autonomy, competence, and relatedness. Participants engage with a structured learning plan that integrates lectures, discussions, case studies, and practical exercises, providing both a solid theoretical foundation and practical tools for implementing SDT principles in real-world coaching scenarios.

Lectures offer foundational knowledge, giving participants a comprehensive overview of SDT and related theories, such as Competency Motivation Theory and Expectancy-Value Theory (Nicholls, 1984; Eccles & Wigfield, 2002). Discussions foster critical thinking and peer-to-peer interaction, enabling participants to explore diverse perspectives and deepen their understanding of how SDT principles can be applied to coaching challenges. A notable assignment involves creating a practice plan that incorporates SDT principles, allowing participants to connect theory to practice. Case studies present realistic scenarios requiring problem-solving with SDT concepts, bridging the gap between theory and real-life application (Yin, 2014). Practical exercises reinforce these lessons by encouraging participants to apply SDT principles in simulated or actual coaching situations, building the confidence and skills necessary to support athletes' psychological needs (Bartholomew et al., 2011).

Assessment strategies are designed to evaluate comprehension, encourage self-reflection, and provide actionable feedback. Written assignments/Discussion Boards test participants' ability to articulate their understanding of SDT and related theories. Reflective journals prompt participants to critically examine their coaching practices, identify areas for improvement, and integrate SDT principles into their

professional mindset (Moon, 1999). Coaching observations enable instructors to evaluate the application of SDT strategies in practice, offering tailored feedback to support participants' growth. The final exam, as a culminating assessment, evaluates participants' ability to analyze and apply SDT principles, ensuring they possess the knowledge and critical thinking skills necessary to integrate these strategies effectively.

Aligning the program's instructional design and assessment methods with its learning objectives creates a cohesive and impactful educational experience. By equipping coaches with evidence-based practices, the Program promotes athlete-centered coaching that prioritizes psychological well-being and long-term development (Hagger & Chatzisarantis, 2007; Deci & Ryan, 2017).

Learning Theories

For the design of this program, we decided to apply several fundamental learning theories, such as Self-Determination Theory (SDT), Competency Motivation Theory, and Expectancy-Value Theory, alongside Social-Emotional Learning Theory (SEL), which reflects our understanding of addressing the diverse psychological and emotional needs of athletes. Each of these theories provides a unique perspective for coaches to analyze and support the multifaceted aspects of athlete development and performance. **Self-Determination Theory (SDT)**, as outlined by Ryan and Deci (2017), identifies three core psychological needs: autonomy, competence, and relatedness. These needs are essential for fostering intrinsic motivation, personal growth, and psychological well-being. In the context of coaching, SDT offers actionable strategies for creating supportive environments that fulfill these needs. For example, coaches who provide athletes with choices (autonomy), opportunities to develop skills (competence), and a sense of belonging (relatedness) can significantly enhance their motivation and engagement (Deci & Ryan, 2000; Ryan & Deci, 2017). SDT emphasizes that when these needs are met, athletes are more likely to experience sustained motivation, higher levels of performance, and overall satisfaction in their sports activities.

Building on SDT, **Competency Motivation Theory** highlights the innate desire to improve and master new skills. Nicholls (1984) proposed that an individual's motivation is closely tied to their perception of competence and their experiences of success and improvement. For athletes, this means that having opportunities to develop and refine their skills is vital. Coaches can apply this theory by designing practices that challenge athletes appropriately, provide constructive feedback, and celebrate progress. This approach not only enhances athletes' confidence but also fosters a growth mindset, which encourages persistence and resilience in the face of challenges (Ames, 1992; Nicholls, 1984).

Expectancy-Value Theory, as described by Weiner (1979) and expanded by Eccles and Wigfield (2002), this theory explores how individuals' beliefs about their abilities (expectancies) and the importance they assign to a task (value) influence their motivation. For coaches, understanding these perceptions is extremely important. Athletes who believe in their abilities and see value in their efforts are more likely to remain motivated and engaged. Coaches can use this theory to tailor their communication and coaching strategies, ensuring they reinforce positive beliefs and highlight the personal and team benefits of participation. By addressing both internal (e.g., enjoyment) and external (e.g., recognition) sources of motivation, coaches can create an environment where athletes feel empowered and driven to succeed (Eccles & Wigfield, 2002).

When these theoretical frameworks are integrated with social-emotional learning principles, coaches can address not only athletes' performance but also their emotional and interpersonal development. SEL encompasses skills such as emotional regulation, empathy, communication, and relationship-building (Durlak et al., 2011). By incorporating SEL into their practices, coaches can help athletes manage stress, build stronger team relationships, and develop resilience. For instance, coaches who model and teach effective communication strategies can foster team cohesion and mutual respect, which are essential for a positive sports culture (Brackett, Rivers, & Salovey, 2011).

Together, these theories create a comprehensive framework for athlete development that prioritizes both performance and well-being. By meeting athletes' psychological needs through SDT, supporting skill growth with Competency Motivation Theory, aligning tasks with individual perceptions using Expectancy-Value Theory, and fostering emotional intelligence through SEL, coaches can cultivate environments where athletes thrive. This approach not only enhances athletic performance but also prepares athletes for personal and social success beyond the playing field. By applying these interconnected theories, coaches contribute to the holistic growth of their athletes, creating a foundation for sustained motivation and achievement (Deci & Ryan, 2017; Durlak et al., 2011).

Analysis of the Learning Context and Learner Analysis

The learning context for the "Coaching with Purpose: Integrating Self-Determination Theory (SDT) into Sports Coaching Styles" Program is shaped by the diversity of participants' physical locations, cultures, and teaching methods (Horne-Martin, 2002; Rosa, 2024). Coaches come from varied backgrounds and settings, requiring the program to adapt to their unique needs. This diversity ensures the Program remains relevant and inclusive, enabling participants to apply what they learn in their specific contexts effectively. To address these differences, the Program leverages a virtual environment to provide accessibility and consistency for all participants.

The virtual delivery method plays a critical role in participant engagement. Reliable technology, proper lighting, and comfortable workspaces significantly impact learning outcomes (Rosa, 2024). Coaches need stable internet access and suitable devices to benefit from the program fully. The virtual platform is designed for ease of use, ensuring resources are readily accessible and the learning process is efficient. Flexibility in scheduling further accommodates participants' diverse time demands, balancing professional, personal, and educational responsibilities.

Asynchronous content allows participants to engage with materials at their own pace and revisit content as needed, fostering a deeper understanding of SDT principles (Óskarsdóttir, 2020). By incorporating varied teaching methods, such as lectures, discussions, and practical assignments, the Program accommodates different learning styles and preferences. This approach helps participants grasp theoretical concepts and confidently apply them in their coaching practices. By creating an adaptable and inclusive learning environment, the Program aligns with broader trends in education that emphasize the importance of catering to diverse learner populations.

Modern educators face a growing responsibility to create inclusive learning environments due to legal protections for individual rights based on gender and sexual orientation (Óskarsdóttir, 2020). Diversity also encompasses factors such as race, age, and ability, requiring tailored approaches to meet the needs of all learners (Rosa, 2024). In this context, the Program is designed to cater to variations in participants'

age, experience, and cultural backgrounds. Guided by andragogical principles (Knowles, 1980), the Program recognizes that adult learners are self-directed and motivated by personal and professional goals.

Participants vary in experience and motivation, with some seeking advanced knowledge and others driven by curiosity and passion for learning (Vella, 2002; Cassidy & Eachus, 2002). The Program's flexible and inclusive structure supports these diverse needs while fostering a collaborative community of practice. Engaging with peers allows coaches to share experiences and learn from one another, enhancing both their professional growth and their athletes' performance (Wenger, 1998; Lave & Wenger, 1991). By balancing individual flexibility with collective engagement, the Program builds a supportive learning community that promotes sustainable personal and professional development (Garrison & Vaughan, 2008).

Implementation Plan

The implementation phase focuses on delivering instruction in an asynchronous setting to ensure participants effectively grasp the material. This phase helps participants not only understand the subject matter but also master program objectives and apply their knowledge in practical, real-world situations (Molenda, 2003). By bridging the gap between theoretical knowledge and hands-on practice, successful implementation equips participants with actionable skills they can use in their coaching.

The implementation plan ensures a seamless learning experience. Initially, D2L BrightSpace was selected as the Learning Management System (LMS). However, to better align with the institution's tools and meet participant needs, the LMS was switched to Schoology, the platform used by the school, the host site. This transition provides a more familiar and accessible experience for both participants and instructors, enhancing usability and engagement.

The program was hosted at a private school located in Florida. There were 34 registered participants, all of whom were coaches employed at the school. These participants came from diverse backgrounds and levels of experience, making Schoology an ideal choice due to its intuitive design and features, such as progress tracking and interactive tools. The platform supported the participants' varied learning needs, ensuring ease of navigation and sustained engagement.

The implementation team, led by Jose Rosa and Tim Hibbs, brings complementary expertise to the project. Jose Rosa, the program developer and instructional designer, is responsible for crafting the curriculum, lesson plans, and interactive assessments that align with SDT principles. Tim Hibbs, the subject matter expert and instructor, contributes deep knowledge of SDT, sports coaching, and social-emotional learning (SEL). Together, they ensure the program content is both accurate and engaging, drawing on their expertise to deliver a high-quality learning experience (Molenda, 2003). Although the program is delivered asynchronously to accommodate participants' busy schedules, it includes synchronous elements, such as coaching observations. These real-time interactions provide personalized feedback and opportunities for participants to reflect on their coaching practices. This approach fosters connection, enhances understanding, and helps participants apply key SDT concepts in practical scenarios.

The program content, hosted on Schoology, is organized into well-structured modules that guide participants step by step. Each module features multimedia resources, including instructional videos, presentations, and downloadable materials, to address different learning styles. Interactive activities such as quizzes, discussion boards, and case studies promote active engagement and ensure participants can

apply SDT principles in their coaching. This practical approach helps participants connect theoretical knowledge with real-world implementation.

The implementation phase is carefully designed to support participant success by emphasizing accessibility, adaptability, and engagement. The combination of asynchronous flexibility with occasional synchronous elements provides a balance between independent learning and collaboration. This comprehensive plan ensures participants build their skills, deepen their understanding of SDT, and enhance their coaching practices in meaningful ways.

Data Matrix

The evaluation of the Program "Coaching with Purpose: Integrating Self-Determination Theory (SDT)" is structured around key questions designed to measure its effectiveness and impact on participants. A comprehensive data matrix was developed to ensure a thorough analysis aligned with the Program's objectives. Data sources include surveys, coaching observations, and qualitative assessments, combining both quantitative and qualitative methods to capture a broad range of insights into participants' learning and application.

The first question assesses whether participants gained a comprehensive understanding of SDT principles and coaching methodologies. This is evaluated through pre-program and post-program surveys that measure participants' baseline knowledge and their understanding after completing the Program. Comparative analysis of these results highlights growth in participants' comprehension and their ability to articulate key concepts effectively, providing a clear view of the Program's success in fostering theoretical understanding (Deci & Ryan, 2017).

The second question focuses on participants' ability to apply SDT principles in their coaching practices. Data for this is collected through pre, post-program surveys and coaching observations. Surveys capture participants' self-reported application of SDT strategies, while qualitative assessments from observations provide an objective evaluation of how effectively these principles are implemented. Together, these methods ensure a balanced analysis of how participants translate theory into practice (Bartholomew et al., 2011).

The third question examines observable changes in participants' coaching practices and overall effectiveness. This question uses a mix of pre-program and post-program surveys alongside coaching observations. Comparative analysis reveals shifts in participants' coaching methods and attitudes, particularly in fostering athlete autonomy, competence, and relatedness. Qualitative assessments provide deeper insights into these changes, offering examples of how participants adjusted their approaches to meet their athletes' psychological needs (Reinboth, Duda, & Ntoumanis, 2004). The fourth and fifth questions address participants' perceptions of the program structure, delivery, and satisfaction. Post-program surveys provide quantitative data on satisfaction ratings and qualitative feedback on what participants valued most about the program. Responses often highlight areas of strength, such as the clarity of the content and the relevance of examples, while identifying opportunities for improvement, such as adding more case studies or interactive elements. These findings ensure the Program evolves to meet participants' needs and maintains high engagement (Óskarsdóttir, 2020).

Lastly, the sixth and seventh questions explore the challenges participants encountered when implementing SDT principles and the changes they implemented in their approach to athlete skill development post-program. On the Seventh question, pre-program surveys capture participants' initial expectations and perceived obstacles. In contrast, post-program surveys focus on the actual difficulties faced and the adjustments made to skill development practices. Thematic analysis of responses identifies common barriers, such as resistance from athletes or time constraints. It highlights how participants modified their approaches to address technical skill gaps and leverage athlete strengths. These findings guide program refinements, ensuring they continue to address practical challenges effectively (Eccles & Wigfield, 2002).

Data Analysis and Results

1. Comprehensive Pre-Program and Post-Program Survey Analysis

1.1 Summary of Pre-Program Survey Analysis

The survey reveals a predominantly experienced group of coaches, with 71% having over six years of experience, reflecting strong expertise. A small percentage (9%) are newer to the field, while 6% are novices, indicating varied levels of experience. Coaches primarily specialize in single sports, but a significant number manage multiple sports, suggesting diversity in coaching approaches. Some participants also hold administrative roles, broadening their perspectives on coaching strategies. Research supports the notion that diverse coaching experience can lead to more adaptable and context-specific strategies, enhancing overall coaching effectiveness (Côté & Gilbert, 2009).

Figure 1. Pre-Course Survey Answers

Question 1 - How long have you been coaching?	Count	Total Participants	Percentage
Less than 1 year	2	34	6%
1-3 years	3	34	9%
4-6 years	3	34	9%
More than 6 years	24	34	71%
No response	2	34	6%

Teaching life skills emerged as the most important coaching goal among participants, followed by improving athlete performance, building relationships, and fostering long-term development. This highlights a strong emphasis on both personal growth and competitive success, aligning with holistic coaching models that prioritize overall development alongside skill acquisition (Lara-Bercial & Mallett, 2016). Coaches also recognize the importance of understanding athlete motivation, addressing both intrinsic and extrinsic factors. This approach reflects Self-Determination Theory (Deci & Ryan, 2000), which emphasizes that motivation improves when athletes experience autonomy, competence, and relatedness.

1.2 Qualitative Results

The qualitative responses provided deeper insights into how coaches assess and track athlete progress throughout the season. Coaches commonly use a combination of observation, performance metrics, and

athlete feedback. Observing athletes during practices and games allows coaches to evaluate skills and performance, while tracking measurable aspects such as speed, strength, or technical execution provides valuable data. Athlete feedback is also critical, as it offers a holistic view of their development. Some coaches compare athlete performance to benchmarks or team averages to gauge relative progress.

When it comes to tracking long-term development, coaches rely on a variety of tools and methods. Technology, such as video analysis and tracking software, is widely used to document and review performance improvements. Statistical tools, including spreadsheets and apps, help monitor game stats and performance trends over time. Goal-setting frameworks are also critical, with short- and long-term goals serving as benchmarks for evaluating progress. Additionally, one-on-one discussions with athletes ensure individualized tracking and alignment with development plans.

By integrating qualitative methods, such as observation and feedback, with quantitative tools like video analysis and metrics, coaches create a comprehensive approach to assessing and tracking athlete progress. This blend of methods supports both immediate performance improvements and long-term athlete growth.

1.3 Summary of Post-Program Survey Analysis

The post-program survey for the program revealed meaningful insights into its impact on participants' professional practices. Out of 34 participants, 21 completed the survey, achieving a 61.8% response rate. Despite potential nonresponse bias, the findings highlighted significant changes in coaching approaches, motivations, and priorities. A key finding was the evolution of coaching approaches. A combined 81% of participants reported moderate to significant changes in their methods, reflecting the program's success in fostering professional growth. Most participants shifted their coaching styles toward being more flexible and adaptable (38%) or collaborative with athletes (33%), while others adopted supportive, empathetic, or player-centered approaches. These adjustments illustrate the integration of autonomy-supportive strategies that prioritize athletes' needs and development.

The survey also explored participants' motivations for continuing in their coaching roles. A significant 81% cited a desire to influence athletes as their primary motivator positively. This focus on athlete development highlights the program's ability to inspire intrinsic motivation that is aligned with SDT principles. Other motivators included professional growth, enjoyment of competition, and a renewed passion for the sport, further emphasizing the Program's personal and professional impact. Participants reported a notable shift in their coaching focus areas after completing the program. Teaching life skills (33%) and long-term athlete development (29%) emerged as top priorities, followed by building stronger relationships (24%) and improving athlete performance (14%). These results suggest a move toward holistic coaching practices that balance athletic growth with life preparation, underscoring a modern, athlete-centered methodology.

Another significant finding was the increased involvement of athletes in decision-making. Most participants (76%) included athletes in setting individual and team goals, while others involved them in post-game debriefs (57%) and practice planning (43%). This collaborative approach aligns with SDT by fostering a sense of ownership and autonomy among athletes, ultimately enhancing their engagement and motivation. Regarding skill development, participants reported improvements in identifying weaknesses and adjusting strategies (19% each). These tailored approaches reflect a commitment to addressing individual athlete needs. Additionally, progress assessments expanded beyond technical metrics to include

personalized training (43%) and psychosocial factors (38%), such as teamwork and attitude. This shift indicates a comprehensive approach to evaluating athlete growth, emphasizing the importance of autonomy, competence, and relatedness.

The program also explored the applicability of SDT across sports. Most participants (62%) found SDT principles universally relevant, while 19% required no modifications for their coaching contexts. However, some participants noted challenges related to athlete motivation or skill gaps, suggesting areas for additional support in applying SDT to specific environments. Participants adopted various tools and strategies from the program. Autonomy-supportive practices (38%) and core SDT principles (33%) were most frequently applied, reflecting the Program's focus on creating athlete-centered coaching environments. A smaller group incorporated innovative tools such as AI and VR (19%) or emphasized holistic athlete development (19%). These practices further demonstrate the Program's influence on evidence-based coaching.

The survey also revealed improvements in coaching relationships. Participants emphasized fostering trust and relatedness (24%), recognizing athletes' individuality (24%), and promoting autonomy (19%). These shifts reflect a commitment to creating supportive environments that prioritize athletes' needs and growth. Additionally, participants valued the program materials, with multimedia resources and assessments rated as highly effective by 81% of respondents. Interactive activities and the learning management system also received positive feedback, though some participants suggested enhancing their structure and usability. The program's emphasis on Self-Determination Theory principles was identified as its most impactful aspect, followed by innovative tools like AI and VR. Participants also appreciated discussions and media examples that reinforced key concepts. However, they suggested adding more real-world applications and increasing engagement to strengthen the program further.

Overall, the Program received strong support, with 52% of participants recommending it as-is and 24% recommending it with minor improvements. These findings demonstrate the program's effectiveness in fostering professional development, inspiring innovation, and promoting athlete-centered coaching practices.

2. Pre- and Post-Survey Insights: Bridging Coaching Goals and Post-Program Practices

When analyzing the pre- and post-program survey data, we aimed to identify patterns that would help us understand how the program influenced participants' coaching goals, styles, and practices. After reviewing the data, we recognized that certain questions reflected recurring themes related to alignment between coaching goals, priorities, and practical applications. These themes guided us in selecting specific questions for comparisons, focusing on how participants' initial perspectives evolved after completing the program. We began by comparing Question 3 from the Pre-Program Survey, which asked participants, *"What Are Your Primary Goals as a Coach?"* with Question 4 from the Post-Program Survey, which asked, *"What Motivates You to Continue Coaching?"* These questions helped us explore whether participants' goals aligned with the motivations driving them after the program. This comparison was critical in understanding if the program reinforced or shifted participants' foundational priorities in coaching.

Next, we examined Pre-Program Questions 5 and 7. Question 5 asked participants, *"Which Best Describes Your Current Coaching Style?"* and provided a series of well-known coaching styles for them to select

from. This allowed us to capture how participants viewed themselves as coaches before the program. Question 7 asked, *"How Frequently Do You Focus on These Areas During Practice?"* and listed various areas of focus. This comparison offered insight into how participants prioritized specific coaching behaviors during practice, adding depth to our understanding of their approaches before the program. We also compared Pre-Program Question 3 (What Are Your Primary Goals as a Coach?) with Post-Program Question 2 (After this program, how would you describe your coaching style now compared to when you began?).This allowed us to evaluate whether participants' initial coaching goals influenced the shifts they made in their coaching styles after completing the program. Additionally, we examined Pre-Program Question 3 (What Are Your Primary Goals as a Coach?) against Post-Program Question 4 (Which aspect of coaching did you focus on more after taking this program?) to assess how initial goals translated into post-program focus areas. Finally, we did a Chi-Square Test to Pre-Program Question 5 and Post Program question 2 to evaluate the impact of the coaching development program on participants' self-reported coaching styles.

By identifying these key questions and comparing responses, we were able to uncover patterns that reflect how the program impacted participants' coaching goals, styles, and behaviors. These comparisons provided valuable insights into whether the program effectively bridged participants' initial priorities with meaningful changes in their coaching practices, while also highlighting areas for improvement.

2.1 Analysis and Results of Chi-Square Test & Fisher's Exact Test for Pre-Program Questions 3 & 4

Understanding the relationship between coaching goals and motivations is crucial for evaluating how effectively a coaching development program aligns with participants' priorities and fosters meaningful change. This analysis examined the connection between participants' pre-program goals and post-program motivations to determine if the program influenced these aspects. Specifically, we explored the research question: **Is there a significant relationship between coaches' primary goals and their motivations for coaching?**

Questions Compared

- **Question 3:** What are your primary goals as a coach?
- **Question 4:** What motivates you to continue coaching?

To address this, a Chi-Square test of independence was employed. This statistical test evaluates whether two categorical variables are associated or independent. The variables analyzed were participants' primary coaching goals (e.g., improving performance, teaching life skills) and their motivations (e.g., passion for the sport, positively influencing athletes). The hypotheses were as follows:

- **Null Hypothesis (H_0):** There is no relationship between coaching goals and motivations. Any observed distribution is due to chance.
- **Alternative Hypothesis (H_a):** There is a significant relationship between coaching goals and motivations.

Figure 2. Results Summary Table

Statistic	Value
Pearson Chi-Square	0.397
Degrees of Freedom (df)	1
p-value (Asymptotic)	0.529
Continuity Correction p-value	0.753
Fisher's Exact Test (2-sided)	0.754
Linear-by-Linear Association	0.389
Significance Threshold	$p < 0.05$

All statistical tests consistently yielded p-values above the 0.05 significance threshold, leading to the failure to reject the null hypothesis. Thus, no significant relationship was observed between participants' coaching goals and their motivations. The findings suggest that participants' pre-program coaching goals and motivations were not significantly aligned or influenced by the program. This indicates that while the Program addressed broader coaching practices, it may not have effectively bridged the connection between participants' initial goals and their motivations for coaching.

The lack of alignment suggests areas for program improvement. Specifically, the program could better integrate participants' starting goals into its structure to create a more tailored and impactful learning experience. Addressing this gap may enhance the program's ability to influence participants' coaching practices meaningfully.

2.2 Analysis and Results of Chi-Square Test & Fisher's Exact Test for Pre-Program Questions 5 & 7

The next analysis examined the relationship between coaching styles (Question 5) and coaching behaviors (Question 7). The goal was to determine if specific coaching styles (e.g., collaborative, directive) were linked to particular behaviors (e.g., involving athletes in decision-making). The research question was: **Is there a meaningful relationship between coaching styles and behaviors?**

Questions Compared

- **Question 5:** Which best describes your current coaching style?
- **Question 7:** How frequently do you focus on these areas during practice?

Figure 3. Results Summary Table

Statistic	Value
Chi-Square Value	11.483
Degrees of Freedom (df)	12
p-value (Asymptotic)	0.488
Significance Threshold	$p < 0.05$

The p-value exceeded the significance threshold, indicating no strong evidence of a relationship between coaching styles and behaviors. Observed variations likely occurred by chance. Further research or additional data may uncover clearer trends. While some behaviors, like involving athletes in planning practices, were noted, only 20.59% of participants consistently adopted autonomy-supportive behaviors. Most participants focused on technical skills and teamwork, balancing individual and collective development. The results highlight room for growth in adopting autonomy-supportive practices, particularly in engaging athletes in collaborative activities.

This analysis explored whether pre-program coaching goals (Question 3) influenced shifts in coaching styles post-program (Question 2). The rationale was to assess whether the program facilitated alignment between participants' initial goals and their post-program coaching practices.

Questions Compared

- **Question 3:** What are your primary goals as a coach?
- **Question 2:** After completing the program, how would you describe your coaching style?

Figure 4. Results Summary Table

Statistic	Value
Pearson Chi-Square	25.890
Degrees of Freedom (df)	9
p-value (Asymptotic)	0.002
Significance Threshold	$p < 0.05$

The p-value indicated a statistically significant relationship, suggesting that pre-program coaching goals influenced post-program style changes. Despite the significant findings, the analysis revealed limitations. Sixteen cells (100%) had expected counts below five, violating the Chi-Square test's assumptions. Alternative methods, such as Fisher's Exact Test, may yield more reliable results. Nonetheless, the data supports the program's role in aligning participants' initial priorities with coaching practices.

The findings underscore the importance of tailoring program content to align with participants' pre-program goals. Addressing identified limitations and enhancing participant engagement with personalized learning objectives could strengthen future iterations of the Program.

3. Gradebook Statistics and Performance Analysis

The gradebook statistics provided a comprehensive overview of participant performance across program modules and the final exam, highlighting trends and areas for improvement. The average scores across assessments demonstrated consistent achievement, with percentages ranging from approximately 55.88% to 62.25%. The standard deviations indicated variability, particularly in the final exam, where the highest deviation (47.55%) suggested significant differences in participants' preparedness or comprehension levels. In contrast, Module 3 exhibited the lowest deviation (44.99%), reflecting more uniform performance. Notably, the median scores were consistently higher than the averages, with several assessments showing a mode of 100%. These results imply that while many participants excelled, a subset struggled, pulling down the overall averages.

The performance variability underscores the need for targeted interventions, such as personalized feedback and supplemental resources, to address disparities. High-performing participants demonstrate the program's potential to foster mastery, as evidenced by the frequent occurrence of perfect scores. However, the spread in performance suggests opportunities to refine instructional delivery and assessment strategies, ensuring that all participants receive adequate support to succeed. Future program iterations might benefit from integrating tailored review sessions and additional practice opportunities, particularly for participants who exhibit challenges with core concepts.

This section highlights the importance of leveraging gradebook insights to refine program implementation and optimize participant outcomes. By addressing variability in performance, the program can continue to evolve as a model for effective autonomy-supportive coaching education.

4. Answering the Data Matrix: Insights into Participant Outcomes and Program Effectiveness

The "Coaching with Purpose" program aimed to align coaching practices with Self-Determination Theory (SDT) principles by enhancing participants' understanding and application of autonomy, competence, and relatedness. To evaluate the program's impact, a multi-faceted data analysis was conducted, integrating pre- and post-program surveys, participant feedback, and observational data. This document addresses key questions regarding the outcomes and effectiveness of the program, providing detailed insights supported by data and participant observations. Each section focuses on a specific aspect of the program's impact, from participants' theoretical understanding to practical implementation of SDT principles, and concludes with interpretations and implications for future improvement.

Question 1 - Did participants demonstrate a comprehensive understanding of coaching methodologies based on SDT principles?

Data Sources:

- Pre-program Survey Question: "Which of the following best describes your current coaching style?"
- Post-program Survey Question: "How has your understanding and application of SDT principles changed?"
- Observations

General Observations:

Post-program results revealed significant progress in participants' understanding of SDT principles. Pre-program, only 20% of participants incorporated autonomy-supportive methods. Post-program feedback and observations showed 85% of participants reporting improved application of these principles. Participant 6 provided a strong example of SDT integration, incorporating player input during defensive drills and using positive, competence-building feedback. Participant 4 excelled in fostering autonomy through goal-setting exercises and enhancing relatedness by encouraging open communication.

Figure 5. Pre and Post Program comparative

Aspect	Pre-Program	Post-Program
Understanding of SDT	Limited or absent.	Demonstrated comprehensive understanding
Application of Autonomy	Minimal. Rarely incorporated.	Central focus with athlete-driven input
Competence Development	Focused on technical skills and execution.	Emphasized mastery and confidence
Relatedness	Rarely addressed.	Prominent through communication efforts

These findings highlight the program's effectiveness in improving participants' theoretical understanding and practical application of SDT principles. Participants who adopted autonomy-supportive methods, like Participants 6 and 4, demonstrated how SDT can enhance motivation and athlete engagement. Although most participants showed improvement, some struggled with balancing autonomy, competence, and relatedness. Tailored follow-up workshops and peer coaching could help refine their practices.

Question 2 - Were participants able to effectively apply SDT principles in their coaching practices after completing the program?

Data Sources:

- Pre-program Survey Question: "What specific tools or methods do you use to track athlete development over time?"
- Post-program Feedback Survey: "What new strategies, tools, or methods did you learn from the program that you've incorporated into your coaching?"
- Observations

General Observations:

Participants exhibited varying levels of success. Pre-program, only 20% regularly involved athletes in decision-making. Post-program, 70% adopted autonomy-supportive strategies. For instance, Participant 8 allowed athletes to design plays, promoting autonomy and collaboration, while Participant 2 integrated reflective exercises into tactical drills.

Figure 6. Comparative Table of Coaching Practices

Aspect	Pre-Program	Post-Program
Athlete Decision-Making	Rarely involved.	Central strategy for autonomy
Collaboration and Relatedness	Minimal.	Actively promoted through teamwork
Reflective Practices	Not a focus.	Integrated into drills and feedback

Participants like Participant 8 showed outstanding application of SDT by fostering autonomy and competence. However, others, such as Participant 7, struggled to transition from directive coaching styles. Additional support, such as mentorship or sport-specific workshops, may help address challenges and ensure consistent SDT implementation.

Question 3 - What observable changes were noted in participants' coaching practices and effectiveness post-program?

Data Sources:

- Pre-program Survey Question: "How frequently do you focus on specific technical or strategic aspects during practice?"
- Post-program Survey Question: "What new strategies, tools, or methods did you learn from the program that you've incorporated into your coaching?"
- Observations

General Observations:
Significant changes were observed in participants' practices. Participant 3 introduced peer feedback, enhancing competence and collaboration. Participant 9 fostered resilience through reflective discussions, while Participant 6 empowered athletes with collaborative strategies.

Figure 7.

Aspect	Pre-Program	Post-Program
Technical Focus	Heavy reliance on directive methods.	Balanced with autonomy-supportive methods
Athlete Empowerment	Minimal. Limited athlete involvement.	Prominent through collaborative strategies
Resilience and Growth	Rarely addressed.	Central to reflective discussions

Most participants adopted strategies that blended autonomy, competence, and relatedness. However, some, like Participant 5, retained traditional approaches focused on error correction, limiting autonomy-supportive practices. Ongoing support and tailored professional development could refine practices further, ensuring consistent application of SDT principles.

Question 4 - How did participants perceive the structure and delivery of the program material?

Data Sources:

- Post-program Survey Question: To what extent did the following program materials contribute to enhancing your coaching practices? (Rate each item on a scale from 1 to 5, where 1 = Not Effective, 2 = Slightly Effective, 3 = Moderately Effective, 4 = Very Effective and 5 = Extremely Effective)

General Observations: Participants rated the program materials highly, averaging 4.5/5 for effectiveness. Role-playing exercises and case studies were frequently highlighted as practical tools for understanding SDT principles. Participants praised the interactive components, stating they provided actionable strategies for enhancing autonomy and relatedness. A participant suggested incorporating sport-specific examples to contextualize the material further. Overall, the program was well-received, providing a solid foundation for SDT application in diverse coaching settings.

Statistical Analysis: Participants' Perception of Program Structure and Delivery

Theme: Evaluating the Effectiveness of Program Materials

The analysis focused on participants' perceptions of the structure and delivery of program materials, specifically examining the effectiveness of overall materials, role-playing exercises, case studies, and interactive components. A paired samples t-test was conducted to evaluate differences in ratings between role-playing exercises and case studies, which were two central teaching strategies of the program.

Descriptive Statistics

Participants rated each component of the program on a 5-point scale, with 5 indicating the highest level of effectiveness.

Figure 8. Summary of Ratings:

Program Component	Mean	Median	Range	% Rated 5
Overall Materials	4.50	4.50	4–5	50%
Role-Playing	4.60	5.00	4–5	60%
Case Studies	4.40	4.00	4–5	40%
Interactive Components	4.60	5.00	4–5	60%

Interpretation: Participants provided ratings for the program materials on a scale from 1 to 5, with 5 being the highest level of effectiveness. Overall, the materials received positive feedback, with role-playing exercises and interactive components being particularly well-regarded. The overall materials were

highly rated, with a mean of 4.50 and a median of 4.50. The range of scores was between 4 and 5, with 50% of participants rating this component a 4 and the other 50% rating it a 5.

Role-playing exercises also scored strongly, with a mean rating of 4.60 and a median of 5.00. Most participants (60%) gave this component the highest score of 5, while 40% rated it a 4. Case studies were slightly lower but still well-received, with a mean of 4.40 and a median of 4.00. 60% of participants rated this component a 4, while 40% rated it a 5. Interactive components tied with role-playing exercises as the highest-rated element, achieving a mean score of 4.60 and a median of 5.00. Similarly, 60% of participants rated it a 5, and 40% rated it a 4.

These results indicate that participants found the program materials both effective and engaging, with role-playing exercises and interactive components being the most valued. Future program iterations could build on these strengths by incorporating additional interactive and scenario-based learning opportunities to enhance engagement further.

Key Observations:

- Participants rated all program components highly, with role-playing exercises and interactive components receiving the highest scores (means of 4.60).
- While role-playing exercises had slightly higher ratings than case studies, the difference was not statistically significant.
- These findings suggest that both role-playing and case studies were well-received and perceived as effective tools for learning.

Recommendations:

- Continue emphasizing role-playing exercises and interactive components in future iterations of the program, as these were particularly valued.
- Consider enhancing case studies by integrating interactive or sport-specific elements to increase engagement and perceived effectiveness.
- Conduct follow-up studies with larger sample sizes to further explore participant preferences and identify opportunities for improvement.

Summary

Participants had a positive perception of the program structure and delivery, rating all components above 4.4 on average. The t-test results indicate that role-playing exercises and case studies were equally valued as instructional methods, with no significant differences between the two. These findings provide a foundation for refining program materials and tailoring future training sessions to maximize participant engagement and learning outcomes.

Question 5 - What were the overall satisfaction levels of participants with the program content and delivery?

Data Sources:
Post-program Survey Question: "Would you recommend this program to others?"

General Observations:
Satisfaction levels were high, with 76% recommending the program. Participants appreciated the balance of theory and application, though some suggested more peer collaboration opportunities.

Figure 9.

Aspect	% Respondents
Would Recommend	76%
Did Not Respond	24%

The high recommendation rate reflects the program's success in meeting participants' expectations while identifying areas for enhancement. Additional follow-up sessions and clearer time commitments could improve satisfaction further.

Question 6 - What challenges did participants encounter in implementing SDT principles in their coaching?

Data Sources:
Observations

General Observations:
Participants faced challenges balancing autonomy with structure. Resistance from athletes, time constraints, and skill variability were common barriers.

Figure 10.

Challenge	Example
Resistance to Autonomy	Athletes hesitant to take initiative
Time Constraints	Limited opportunities for reflection
Skill Variability	Difficulty adapting drills for all levels

While many overcame obstacles, tailored support could help address persistent challenges. Sport-specific workshops and additional mentorship may assist participants in consistently applying SDT principles.

Question 7 - What changes did participants implement in their approach to athlete skill development post-program?

Data Sources:
- Pre-program Survey Question: "What specific tools or methods do you use to track athlete development over time?"
- Post-program Survey Question: "Have you changed how you address skill development with your athletes as a result of the program?"

- Observations

General Observations:
Participants transitioned from directive methods to SDT-aligned strategies such as reflective goal-setting and collaborative play-design exercises.

Figure 11.

Aspect	Pre-Program	Post-Program
Skill Development Focus	Directive, technical metrics.	Reflective, autonomy-driven approaches.
Athlete Engagement	Minimal input in decision-making.	Actively involved in skill improvement.

The observed changes demonstrate meaningful progress in participants' ability to apply SDT principles to athlete skill development, though varying levels of implementation suggest a need for additional support. Tailored professional development opportunities, such as sport-specific examples and ongoing mentorship, could help refine approaches and reinforce autonomy-supportive practices.

Summary

Participants demonstrated significant growth in their understanding and application of Self-Determination Theory (SDT) principles in coaching methodologies after completing the program. Pre-program data showed that only 20% of participants used autonomy-supportive strategies, while post-program observations revealed 85% had improved their practices. Notable examples include Participant 6, who effectively integrated player input and positive feedback into drills, and Participant 4, who emphasized goal-setting and communication to enhance autonomy and relatedness. However, some participants struggled to balance the core SDT principles, autonomy, competence, and relatedness, highlighting the need for ongoing mentorship and tailored workshops to address these challenges. The program materials and delivery received positive feedback, with participants rating role-playing exercises and interactive components highly effective (mean score of 4.6/5). These activities were instrumental in translating SDT principles into actionable coaching strategies. While most participants successfully implemented reflective practices, collaborative methods, and autonomy-supportive techniques, challenges such as athlete resistance, time constraints, and skill variability persisted. Recommendations for future programs include enhancing sport-specific examples, integrating peer collaboration opportunities, and providing continued professional development to refine SDT-aligned practices and maximize athlete engagement.

5. Linking Learning Theories to the Data Matrix Analysis and Observations

The data matrix analysis demonstrates how participants applied coaching practices rooted in established learning theories, including **Self-Determination Theory (SDT)**, **Competency Motivation Theory**, **Expectancy-Value Theory**, **Social-Emotional Learning (SEL)**, **Transformational Leadership Theory**, and **Constructivist Learning Theory**. Together, these theories provided a robust framework for guiding participants in fostering athlete motivation, development, and emotional well-being. Over 80% of participants reported moderate to significant shifts in their coaching approaches, indicating a strong understanding of **Self-Determination Theory (SDT)**. Practices such as Participant 1's goal-setting exercises and Participant 2's reflective debriefs illustrate the importance of autonomy,

competence, and relatedness in enhancing intrinsic motivation (Ryan & Deci, 2017). These findings align with **Competency Motivation Theory**, which underscores the role of perceived competence in driving motivation and persistence (Nicholls, 1984).

Additionally, **Expectancy-Value Theory** adds depth by explaining how participants' ability to connect tasks to meaningful outcomes influenced their coaching strategies. Coaches emphasized the value of autonomy-supportive practices, ensuring athletes saw both immediate and long-term benefits in their efforts, as outlined by Eccles and Wigfield (2002). The survey and observations revealed significant shifts in participants' coaching styles, with 38% reporting more flexible and 33% adopting collaborative approaches. Participant 7's athlete-led activities reflect **Transformational Leadership Theory**, emphasizing the empowerment of athletes through shared decision-making and inspirational leadership (Bass, 1990). Coaches encouraged autonomy and competence by involving athletes in planning and reflecting on their progress.

Incorporating **Social-Emotional Learning (SEL)** principles, Participant 9 utilized reflective cool-downs to strengthen interpersonal skills and emotional resilience, aligning with research on the benefits of SEL in team dynamics (Durlak et al., 2011). These practices supported team cohesion and highlighted the role of SEL in fostering a psychologically safe environment (Brackett, Rivers, & Salovey, 2011). Participants demonstrated a clear shift toward athlete-centered coaching, emphasizing teaching life skills (33%), long-term development (29%), and relationship-building (24%). Participant 3's focus on technical skill refinement aligns with **Competency Motivation Theory**, which links perceived skill mastery with motivation (Ames, 1992). Participant 8's collaborative drills showcase **Transformational Leadership Theory**, where athletes were encouraged to contribute to team strategies, promoting a sense of shared responsibility. These findings also reflect **Expectancy-Value Theory**, as coaches like Participant 4 successfully linked practice tasks to meaningful outcomes, reinforcing athletes' sense of purpose. The integration of **Social-Emotional Learning (SEL)**principles, such as fostering team reflections and collaboration, strengthened bonds and enhanced intrinsic motivation.

The program materials received high ratings, with 81% of participants finding multimedia resources effective and 72% valuing interactive activities. This aligns with **Constructivist Learning Theory**, which highlights the importance of experiential, active learning in building knowledge (Piaget, 1971). The interactive nature of the program allowed participants to contextualize theoretical concepts in real-world coaching scenarios. However, mixed feedback on the Learning Management System (LMS) suggests room for improvement. Incorporating features that foster collaborative and reflective learning could align the platform more closely with **SEL principles** and **Transformational Leadership Theory**, which emphasize shared learning experiences and team cohesion (Durlak et al., 2011; Bass, 1990).

With 52% of participants recommending the program without reservations, its relevance and impact are evident. However, 24% suggested improvements, highlighting the need for enhanced personalization and practical application. These findings align with **Expectancy-Value Theory**, which emphasizes the importance of perceived task value in maintaining motivation (Eccles & Wigfield, 2002). Introducing additional real-world scenarios and opportunities for peer collaboration could address these suggestions and further strengthen the program's effectiveness. Approximately 19% of participants identified challenges related to athlete motivation, skill gaps, or sport-specific dynamics. These challenges underscore the need for strategies grounded in **Competency Motivation Theory** and **Transformational**

Leadership Theory. Coaches like Participant 7, who struggled with balancing autonomy and structure, could benefit from tools that inspire athletes while maintaining instructional rigor (Bass, 1990).

Structural barriers, as noted by Participant 4, highlight the importance of **SEL principles** in fostering adaptive coaching practices. Strategies such as team-building exercises and reflective discussions can address these barriers, ensuring a balance between autonomy and structure (Durlak et al., 2011). The changes participants made to athlete skill development post-program align with **Constructivist Learning Theory**, which emphasizes active engagement, reflection, and collaboration as essential components of learning. This was evident in practices like reflective goal-setting (Participant 4) and self-assessment exercises (Participant 1), which allowed athletes to take ownership of their learning while aligning personal goals with team objectives. These methods encouraged athletes to construct knowledge through experience and reflection, key tenets of constructivism as described by Piaget (1976) and Vygotsky (1978). Collaborative approaches, such as Participant 8's play-design exercises and Participant 6's peer coaching, align with **Social Constructivism**, which highlights the role of interaction in learning.

Additionally, elements of **Experiential Learning Theory** (Kolb, 1984) were present in how participants used personalized feedback and reflection to engage athletes in active learning cycles. Participant 9 exemplified this by framing feedback as a tool for growth and encouraging athletes to reflect on both successes and setbacks during cool-down sessions. These strategies supported athletes in developing autonomy, competence, and relatedness while fostering a growth mindset. Despite these successes, challenges such as directive coaching styles (e.g., Participant 5) and resistance to autonomy-supportive methods (e.g., Participant 3) highlight the need for additional support to help coaches consistently implement these theories in practice.

The integration of **Self-Determination Theory**, **Experiential Learning Theory, Competency Motivation Theory**, **Expectancy-Value Theory**, **Social-Emotional Learning**, **Transformational Leadership Theory**, and **Constructivist Learning Theory** provided a comprehensive framework for participant growth. These theories enabled participants to enhance their coaching practices by addressing athletes' psychological needs, fostering skill development, and building emotional resilience. Moving forward, refining the program to include personalized applications and collaborative learning opportunities will further strengthen its impact, ensuring sustained motivation and success for both coaches and athletes.

Conclusion

The program has proven to be a critical and innovative step forward in addressing the gaps left by traditional coaching methodologies. By grounding its approach in SDT principles, autonomy, competence, and relatedness, the program not only enriched the theoretical understanding of coaching but also empowered participants to implement these concepts in their daily coaching practices practically. This integration of SDT with other foundational learning theories like Competency Motivation Theory, Expectancy-Value Theory, Social-Emotional Learning (SEL), Transformational Leadership Theory, and Constructivist Learning Theory ensured a comprehensive framework for fostering athlete development, motivation, and psychological well-being. The pre-program survey data revealed that many participants initially lacked awareness or a clear understanding of SDT principles. Coaching practices were predominantly directive, focusing heavily on task completion, technical drills, and measurable outcomes.

However, post-program data illustrated significant growth, with over 85% of participants reporting improved application of autonomy-supportive strategies in their coaching practices.

For instance, participants incorporated athlete-driven decision-making, reflective goal-setting, and collaborative planning into their sessions. These changes reflect a deeper understanding of how fulfilling athletes' intrinsic psychological needs can enhance motivation, performance, and overall satisfaction. Notable examples included Participant 8, who demonstrated exemplary integration of SDT by involving athletes in designing plays during scrimmages. This approach fostered autonomy, competence, and relatedness, creating a supportive environment where athletes felt empowered to contribute actively to their development. Similarly, Participant 9 emphasized reflective discussions during cool-down sessions, promoting resilience, a growth mindset, and stronger interpersonal connections within the team.

One of the most significant impacts of the program was the participants' transition from traditional, control-focused coaching styles to athlete-centered methodologies. Pre-program practices often prioritized immediate skill acquisition over long-term development, relying on rigid, top-down approaches that left little room for athlete input. Post-program feedback and observations revealed that 81% of participants had shifted their coaching styles, with many adopting more flexible, collaborative, and empathetic methods. For example, Participant 1 utilized reflective goal-setting exercises to align individual and team objectives, fostering both autonomy and relatedness. Participant 6 empowered athletes by involving them in strategic planning during defensive drills, enhancing both their tactical understanding and sense of ownership. These shifts underscored the Program's success in equipping coaches to balance structure with autonomy-supportive practices, creating environments conducive to both personal and team growth.

However, not all participants fully embraced the shift. For instance, Participant 5 continued to rely on directive methods, emphasizing error correction and task completion over athlete-driven learning. While this approach ensured competence in the short term, it limited opportunities for fostering autonomy and intrinsic motivation. Such cases highlight the need for ongoing mentorship and tailored support to help coaches overcome challenges and fully implement SDT principles. The incorporation of Social-Emotional Learning (SEL) principles added a crucial dimension to the Program, addressing the psychological and emotional aspects of athlete development. Coaches learned to recognize and respond to stress, anxiety, and other emotional challenges, integrating strategies that promoted resilience and emotional intelligence. Participants like Participant 9 excelled in this area, using reflective questioning and personalized feedback to build athletes' confidence and foster a growth mindset. By prioritizing SEL, the Program emphasized the importance of creating psychologically safe environments where athletes feel supported and motivated. Participants also learned the value of building relationships as a foundation for effective coaching. The principle of relatedness—one of SDT's core tenets—was evident in practices that encouraged open communication, trust, and mutual respect. Coaches reported that stronger coach-athlete relationships not only improved team cohesion but also enhanced individual motivation and engagement.

Despite the Program's successes, participants faced challenges in applying SDT principles to their coaching contexts. Time constraints, skill variability among athletes, and resistance to autonomy-supportive methods were common obstacles. For example, Participant 3, noted that athletes accustomed to directive styles initially struggled to adapt to more collaborative approaches. Similarly, Participant 7 found it difficult to balance autonomy-supportive practices with maintaining safety and structure during contact drills for less experienced athletes. These challenges underscore the importance of ongoing support and professional development to address practical barriers. Follow-up workshops, peer coaching

sessions, and sport-specific resources could help participants refine their practices, ensuring consistent implementation of SDT principles across diverse coaching environments.

Participants rated the program highly, particularly valuing the interactive components, such as role-playing exercises and case studies. These methods provided practical, actionable strategies for applying SDT principles in real-world scenarios. However, some participants suggested enhancements, such as incorporating more sport-specific examples and increasing opportunities for peer collaboration. The program's emphasis on balancing theory with practical application was a key strength. By integrating lectures, discussions, and hands-on exercises, participants gained both a solid theoretical foundation and the confidence to implement new strategies effectively. The use of multimedia resources and an accessible learning management system further supported engagement, though feedback indicated room for improvement in platform usability.

The "Coaching with Purpose" Program demonstrated that SDT-aligned coaching practices can significantly enhance athlete motivation, well-being, and performance. By fostering autonomy, competence, and relatedness, coaches can create environments where athletes thrive both on and off the field. However, the Program also highlighted the challenges of transitioning to these practices, particularly for coaches with deeply ingrained directive styles or those working with athletes resistant to change.

To build on this foundation, future iterations of the Program should consider the following recommendations:

1. **Personalized Support**: Offer tailored resources and mentorship to address individual coaching challenges and contexts.
2. **Sport-Specific Examples**: Incorporate case studies and scenarios relevant to different sports to enhance practical applicability.
3. **Ongoing Development**: Provide follow-up workshops and peer coaching opportunities to reinforce learning and address implementation barriers.
4. **Enhanced Collaboration**: Create more opportunities for participants to engage with peers, share experiences, and learn from each other's practices.

The "Coaching with Purpose" program has set a new standard for integrating evidence-based practices into sports coaching. By equipping coaches with the tools to foster autonomy, competence, and relatedness, it has redefined the role of the coach as not just a teacher of skills but also a mentor and supporter of holistic athlete development. The program's emphasis on SEL and SDT principles ensures that athletes are not only prepared for success in sports but also for personal growth and lifelong learning. As the field of sports coaching continues to evolve, initiatives like this Program will play a vital role in shaping a more inclusive, supportive, and effective coaching culture.

Appendix 1- Learning Objectives and Learning/Assessment Task Tables

Learning Objectives:
1. Develop a thorough understanding of Self-Determination Theory (SDT) and its practical implications in sports coaching, emphasizing autonomy, competence, and relatedness.
2. Explore integrating principles from other learning theories with SDT to create inclusive and supportive coaching environments conducive to athlete growth and success.
3. Effectively apply SDT principles in coaching practice to foster athlete motivation, satisfaction, and optimal performance, utilizing diverse coaching techniques tailored to individual athlete needs.
4. Investigate advanced coaching methods aligned with SDT principles to continually enhance coaching effectiveness and athlete development, ensuring sustained engagement and progress.

The table below illustrates how each learning/assessment task corresponds to specific learning objectives

Learning/ Assessment Task	Learning Objectives Addressed
Lectures	Understanding SDT and SEL principles
Discussions	Critical thinking and collaborative learning
Case Studies	Application of theoretical concepts
Practical Exercises	Application of theory to coaching practice
Written Discussion Board Assignments	Demonstration of understanding and application of key theories and Development of coaching plan integrating SDT and SEL principles
Coaching Observations	Application of theoretical knowledge in coaching settings
Final Exam	Demonstrate comprehensive knowledge and practical application of Self-Determination Theory (SDT) principles and related frameworks by developing a cohesive coaching strategy that enhances athlete motivation, satisfaction, and well-being while fostering autonomy, competence, and relatedness in real-world sports coaching scenarios.

Appendix 2- Data Matrix for "Coaching with Purpose: Integrating Self-Determination Theory"

Question	Data Sources	Data Analysis
1. Did participants demonstrate a comprehensive understanding of coaching methodologies based on SDT principles?	Post-program Feedback Survey Coaching Observations	Comparative analysis of post-survey results and Qualitative assessment of coaching practices
2. Were participants able to effectively apply SDT principles in their coaching practices after completing the program?	Post-program Feedback Survey Coaching observations	Analysis of survey responses and Qualitative assessment of coaching practices
3. What observable changes were noted in participants' coaching practices and effectiveness post-program?	Post-program Feedback Survey Coach Observations	Comparative analysis of post-survey results and Qualitative assessment of coaching practices
4. How did participants perceive the structure and delivery of the program material?	Post-program Feedback Survey	Analysis of survey responses
5. What were the overall satisfaction levels of participants with the program content and delivery?	Post-program Feedback Survey	Analysis of survey responses Quantitative assessment of satisfaction ratings
6. What challenges did participants encounter in implementing SDT principles in their coaching?	Coaching Observations	Qualitative assessment of coaching practices
7. What changes did participants implement in their approach to athlete skill development post-program?	Post-program Feedback Survey	Analysis of survey responses

Appendix 3 - Program Gradebook Statistics: Performance Analysis Across Modules and Final Exam: Key Insights and Variability Trends

The statistical summaries provided represent the performance data of 34 participants across different assessments, including module grades and a final exam. Each dataset includes key metrics such as maximum points, highest and lowest grades, averages, standard deviations, medians, and modes, offering a comprehensive view of performance trends throughout the program.

The **average scores** across the assessments reflect a consistent level of achievement, with percentages ranging from approximately 55.88% to 62.25%. This indicates moderate-to-good performance among participants, with potential areas for improvement. For example, the final exam average score of 60.35% closely aligns with the module averages, demonstrating overall consistency in participant performance throughout the learning process.

The **standard deviations** highlight variations in performance. The highest standard deviation observed in the final exam (47.55%) suggests significant differences in scores, potentially due to varying levels of preparedness or understanding among participants. In contrast, Module 3 has the lowest standard deviation (44.99%), indicating more uniform performance in that specific module.

The **median scores**, often higher than the averages, reveal that at least half of the participants performed relatively well in each assessment. For instance, the final exam median score of 95% is significantly above the average of 60.35%, suggesting that a substantial portion of participants excelled, while a smaller group of low scores likely pulled down the average.

The **modes** further emphasize performance trends, with several modules and the final exam showing a mode of 100%. This indicates that the most frequently achieved score was a perfect score, reflecting mastery by many participants. However, these high performers do not fully offset the impact of the lower scores on the overall averages.

Overall, this analysis highlights the need to address variability in performance. Targeted interventions, such as focused review sessions or individualized support, could help reduce disparities and improve overall outcomes. Understanding why some participants excel while others struggle will be essential for informing strategies to enhance learning and assessment results.

Statistics per module and Final Exam

Module 1-

# of Grades	34	Average	37.35 (62.25%)
Max Points	60	Standard Deviation	27.71 (46.19%)
Highest Grade	60 (100%)	Median	55 (91.67%)
Lowest Grade	0 (0%)	Mode	60 (100%)

Module 2

# of Grades	34	Average	17.35 (57.84%)
Max Points	30	Standard Deviation	13.79 (45.95%)
Highest Grade	30 (100%)	Median	25 (83.33%)
Lowest Grade	0 (0%)	Mode	0, 30 (0%, 100%)

Module 3

# of Grades	34	Average	11.18 (55.88%)
Max Points	20	Standard Deviation	9 (44.99%)
Highest Grade	20 (100%)	Median	15 (75%)
Lowest Grade	0 (0%)	Mode	0, 20 (0%, 100%)

Module 4

# of Grades	34	Average	18.53 (61.76%)
Max Points	30	Standard Deviation	14.58 (48.6%)
Highest Grade	30 (100%)	Median	30 (100%)
Lowest Grade	0 (0%)	Mode	30 (100%)

Final Exam

# of Grades	34	Average	60.35 (60.35%)
Max Points	100	Standard Deviation	47.55 (47.55%)
Highest Grade	100 (100%)	Median	95 (95%)
Lowest Grade	0 (0%)	Mode	0 (0%)

Appendix 4 – Participant Observations Analysis

Detailed Analysis of Participants' Observations

Participant 1

Participant 1 demonstrated a strong alignment with SDT principles through a practice environment that emphasized autonomy, competence, and relatedness. They began by incorporating player-led exercises, allowing athletes to take ownership of warm-ups and practice segments. Goal-setting activities enabled players to identify specific improvement areas, fostering autonomy by giving them a voice in their developmental journey. Competence was supported through individualized, constructive feedback during drills, such as providing immediate corrections and highlighting positive progress. For example, phrases like "That adjustment made a big difference, great job!" reinforced confidence and skill development. Relatedness was evident in team discussions, where players were encouraged to share feedback and collaborate, creating a supportive atmosphere. The checklist reflects these practices effectively, showcasing a clear alignment with SDT principles.

Participant 2

This coach's approach was deeply rooted in fostering self-improvement over competition, with a focus on reflective practices and adaptive strategies. They began each session by encouraging athletes to reflect on previous goals and adjust their training plans based on feedback. This process promoted autonomy by allowing athletes to take control of their progress and make personal adjustments to their training objectives. Competence was addressed through self-paced goal-setting, enabling athletes to focus on achievable targets that aligned with their abilities. Relatedness was cultivated through collaborative activities, such as group discussions and peer support during practice. These practices created a cohesive and empowering environment where athletes felt connected and supported. The checklist aligns well with these observations, reflecting a strong emphasis on all three SDT principles.

Participant 3

Participant 3 displayed a mixed application of SDT principles, with a strong focus on competence but limited opportunities for autonomy and relatedness. Technical feedback was a primary feature of their coaching, as they provided detailed corrections and praise for skill execution. This approach helped athletes build confidence in their abilities, addressing the need for competence effectively. However, autonomy-supportive strategies, such as self-assessment or athlete input in practice planning, were largely absent. Relatedness was present but less intentional, as there were few activities designed to foster team cohesion or athlete-coach connections. The checklist reflects the emphasis on competence but could better support strategies for promoting autonomy and relatedness. Aligning practices with SDT principles would enhance athlete engagement and intrinsic motivation.

Participant 4

Participant 4 integrated SDT principles seamlessly into their coaching practices, creating an environment that balanced autonomy, competence, and relatedness. They began sessions with goal-setting exercises, inviting athletes to establish individual objectives that aligned with broader team goals. This approach

fostered autonomy by empowering athletes to take ownership of their training. Competence was addressed through individualized adjustments, such as modifying workout intensity based on athlete feedback or physical readiness. Relatedness was a key focus, as the coach facilitated open communication and encouraged team cohesion through feedback sessions and collaborative activities. These practices created a supportive environment where athletes felt valued and connected. The checklist strongly reflects these principles, aligning well with the observed practices and highlighting the coach's commitment to athlete-centered development.

Participant 5

Participant 5 relied heavily on a directive coaching style that emphasized structure and immediate performance outcomes. Competence was addressed through clear instructions and corrective feedback, but the feedback often lacked depth, focusing on task completion rather than skill development or understanding. Opportunities for autonomy were minimal, as players had little input in practice design or decision-making processes. Relatedness was also limited, with few activities promoting collaboration or fostering a sense of connection among athletes. The checklist reflects this emphasis on competence but underrepresents autonomy and relatedness, suggesting areas for improvement. Incorporating strategies that engage athletes in reflective practices or encourage peer collaboration would better align their coaching approach with SDT principles.

Participant 6

Participant 6 effectively balanced autonomy, competence, and relatedness in their coaching practices. They encouraged player input by inviting athletes to propose adjustments and strategies during drills, fostering autonomy and ownership of the learning process. Competence was supported through detailed, constructive feedback, such as highlighting specific areas for improvement and celebrating progress. For instance, the coach used phrases like "Nice release off the line; now let's tighten up that cut on your break to gain even more separation," which reinforced confidence and skill development. Relatedness was cultivated through team interactions, such as pairing athletes for collaborative drills and emphasizing the importance of communication and mutual support. These practices align closely with SDT principles, and the checklist reflects this balance effectively.

Participant 7

Participant 7's coaching approach was primarily directive, with minimal integration of SDT principles. Practices were structured and focused on achieving immediate outcomes, with limited opportunities for athlete input or decision-making. Competence was addressed sporadically through corrective feedback, but the feedback often lacked encouragement or focus on progress, potentially undermining athlete confidence. Relatedness was weak, as interactions were task-oriented and did not foster deeper connections between the coach and athletes. The checklist reflects this structured approach but shows little alignment with SDT principles. To better support athlete development, the coach could incorporate strategies such as reflective practices, collaborative activities, and more positive reinforcement to enhance autonomy, competence, and relatedness.

Participant 8

Participant 8 demonstrated a strong alignment with SDT principles through practices that promoted autonomy, competence, and relatedness. They incorporated collaborative drills that allowed athletes to design plays and contribute to strategic decisions, fostering autonomy and engagement. Competence was addressed through individualized feedback, helping athletes refine their skills and build confidence. Reflection sessions at the end of practice created opportunities for athletes to connect, share their experiences, and recognize each other's efforts, strengthening relatedness. These practices created a motivating and inclusive environment where athletes felt supported and empowered. The checklist aligns well with these observations, reflecting a balanced approach to all three SDT principles.

Participant 9

Participant 9's coaching approach was deeply rooted in SDT principles, blending autonomy, competence, and relatedness seamlessly. Athlete-led reflections and goal-setting exercises fostered autonomy, allowing rowers to take ownership of their development. Competence was supported through individualized feedback and constructive encouragement, helping athletes build confidence in their abilities. Relatedness was emphasized through team cohesion activities, such as collaborative discussions and shared reflections, which created a strong sense of connection among athletes. The checklist reflects these practices effectively, showcasing a clear alignment with SDT principles and the coach's commitment to fostering a growth-oriented environment.

Participant 10

Participant 10 integrated autonomy-supportive practices into their coaching, such as player-led warm-ups and reflective discussions at the end of practice. Competence was addressed through scenario-based drills that challenged players to think critically and apply their skills in game-like situations. Relatedness was fostered through post-practice discussions that encouraged players to share insights and recognize each other's contributions. While the coach's structured approach provided clarity and focus, incorporating more individualized feedback and peer collaboration could further enhance the alignment with SDT principles. The checklist reflects these practices well, highlighting the coach's efforts to create a supportive and engaging environment.

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