Modern Sport

Volume 24 | Issue 5 Article 4

12-31-2025

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Recommended Citation
Obaid, Liqaa Abdulzahra (2025) "The Contribution of Design Thinking to Reducing Excessive Sensitivity to Criticism Among Athletes in Selected Track and Field Events," *Modern Sport*: Vol. 24: Iss. 5, Article 4.
DOI: https://doi.org/10.54702/2708-3454.2107

MODERN SPORT 2025;24:596–609

ORIGINAL STUDY

The Contribution of Design Thinking to Reducing Excessive Sensitivity to Criticism Among Athletes in Selected Track and Field Events

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Abstract

The study sought to develop two measurement scales—design thinking and excessive sensitivity to criticism—and to determine their levels among athletes participating in selected track and field events. In addition, to examine the role of design thinking in reducing excessive sensitivity to criticism among these athletes. The methodology is descriptive, employing a correlational approach was adopted. The population consisted of athletes in selected track and field events representing clubs in Baghdad Governorate, youth category, who were actively training during the local sports season. The population included 186 athletes distributed across various sprint distances, hurdle races of different distances, shot put, discus throw, and javelin throw. All athletes were intentionally as the primary research sample, which was divided into three sub-samples. the data were analyzed using SPSS software. The results showed that the measures of design thinking and excessive sensitivity to criticism had an appropriate degree of validity and validity, allowing them to be used with confidence to measure these two variables among athletes in the selected track and field events. moreover, the sample members possessed acceptable levels of design thinking and hypersensitivity to criticism, with a significant inverse correlation, as higher design thinking was associated with lower hypersensitivity to criticism

Keywords: Design thinking, excessive sensitivity to criticism, track and field

1. Introduction and significance of the study

The sports environment in track and field is characterized by frequent instructions and criticisms directed at athletes, whether necessary or unnecessary. Most of these are intended to reduce technical errors and undesirable behaviors in order to achieve the required levels of athletic performance. These instructions vary according to their source and may be constructive or otherwise. Consequently, the interactive response to such criticism requires a mode of thinking that accepts the positive aspects and disregards the negative ones. Thinking must therefore be goal-oriented without generating pressures that hinder progress toward the desired levels of achievement. In this context, sports psychology plays an important role in clarifying the details of these emotions and the mental processes that serve as preventive mechanisms against elevated levels of such feelings among track and field athletes.

John Locke addressed this issue by stating that all ideas with which our minds must deal come from two sources: the first is sensation, and the second is reflection, or the internal sense, which consists of the mind's perception of its own operations (Whaley, 2002, p. 569).

Excessive sensitivity to criticism is defined as "distinctive and intense reactions and responses to various psychomotor, sensory, imaginative, cognitive, and emotional stimuli within a framework of self-awareness and awareness of one's own emotions, as well as awareness of others and their emotions" (Al-Shazli, 2019, p. 396).

Excessive sensitivity to criticism is also defined as "emotional states of internal distress experienced by an individual when he or she encounters criticism,

Received 26 December 2025; accepted 26 December 2025.
Available online 31 December 2025

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https://doi.org/10.54702/2708-3454.2107

despite believing that such criticism and the pursuit of personal perfection are unnecessary under circumstances in which the individual perceives no need for such guidance" (Al-Ruhaimi, 2023, p. 115).

Moreover, "among the causes of excessive sensitivity to criticism are the formation of strong conditioned associations, self-criticism and self-blame, and the strength of emotional memory" (Al-Shazli, 2019, p. 404).

Based on the premise that external events are not inherently harmful to individuals, the degree of harm largely depends on how individuals are influenced by these events and the nature of their responses to them, which ultimately determines whether such events are perceived as harmful (Al-Khatib, 2014, p. 393).

Similarly, individuals tend to assess their abilities and competencies by relying on their psychological and physiological states. Accordingly, the intensity of physical or emotional reactions is not the decisive factor; rather, the crucial aspect lies in how individuals perceive and interpret these reactions, particularly in terms of forming high or low self-beliefs that play a Importance role in shaping and modifying behavior (Yaseen, 2016, p. 116).

It has also been emphasized by self-esteem theory that excessive or extreme sensitivity to criticism falls within emotional states in which an individual's mode of thinking is affected, leading to exaggeration in interpretation. This, in turn, results in adverse outcomes in accomplishing assigned tasks, or even failure instead of success (Al-Imam, 2021, p. 33).

The researcher believes that athletes must direct their thinking toward pathways of success and train themselves to overcome discouraging factors that hinder the achievement of their professional goals in track and field. They should orient their thinking toward benefiting from constructive criticism by developing their cognitive abilities for discernment. Accordingly, it becomes necessary for athletes to express creative ideas that transform criticism into praise. Thus, the type of thinking plays a crucial role in overcoming feelings of frustration, whether arising from non-constructive criticism or other situations within the sports environment. Design thinking, if properly activated and directed, may provide athletes with such cognitive resilience.

As stated, "thinking leads to the activation of new connections among neural cells, smoothly and through new pathways that did not previously exist. This helps create new possibilities for the mind to perform more cognitive activities, enabling it to function more effectively, more broadly, and with greater efficiency" (Carmen et al., 2017, p. 42).

Considering that "thinking is a daily process constantly accompanying human beings, like walking, and due to the individual's need for it, it has been a subject of interest since ancient times. However, this interest was simple because societies were more stable. Contemporary societies, on the other hand, are no longer stable due to changes resulting from technological development and social aspirations" (Ghanem, 2009, p. 34).

Design thinking is defined as "a mental tool that enables individuals to achieve innovation in producing logical visions and solutions through the use of various thinking methods such as empathy with the conditions of the problem, observation, collaboration, rapid learning, visualization of ideas, and rapid conceptual modeling" (Johansson & Others, 2016, p. 122).

It is also defined as "a comprehensive creative approach directed toward solving problems faced by individuals through generating and developing innovative ideas and models to address them. This does not imply designing geometric or graphic forms; rather, it involves directing creative ideas to design a new concept that is most appropriate for solving those problems" (Roterberg, 2018, p. 979).

Design thinking "is based on the cognitive mental employment of higher-order mental functions, determined by aspects such as alertness, attention, vision, foresight, goal orientation, creative thinking, productive thinking, and positive thinking. It encompasses creative thinking in problem-solving" (Morris & Warman, 2015, p. 51).

Likewise, "design thinking is considered a human-centered design approach that involves a set of stages designers go through, beginning with problem identification, passing through understanding others' perspectives, and ending with implementation" (Brown, 2008, p. 6).

"The stages of the design thinking process include three phases: inspiration, ideation, and implementation, in order to confront challenges by developing a unique creative idea that offers the best possible solutions to the problems faced by the individual" (Al-Aloun, 2024, p. 117).

Design thinking principles also include learning from failure, experimenting with previous experiences, creative confidence, empathy with events, embracing ambiguity, repeated attempts, and logical optimism (Ibrahim, 2025, p. 64).

Design thinking "encourages thinking outside the box and aims to find creative and innovative solutions to various problems. It also implies the need for change and development and contributes to achieving speed, flexibility, and quality in bringing about such development" (Chao-Ming, 2018, p. 54).

Furthermore, "design thinking is considered the decisive element that actually occurs before, during, and after an individual builds his or her own model. It

represents real evidence of innovation, application, and problem-solving based on what the individual knows and what he or she seeks to know" (Mosley et al., 2018, p. 122).

Likewise, "different types and patterns of thinking can be transformed toward positivity through awareness and changing beliefs. Although thinking is a subjective, internal mental process that cannot be directly observed, psychological programs built on real needs have proven effective in shifting thinking toward the desired positivity, as indicated by the responses of many individuals' samples" (Al-Assal, 2023, p. 102).

Accordingly, the importance of the present study lies in the researcher's attempt to shed light on the emotions and internal mental processes of athletes in selected track and field events, represented by design thinking and excessive sensitivity to criticism, in order to provide a theoretical framework for them within sports psychology. Practical and applied benefits may also be derived after identifying the relationships and mutual effects between these two variables, thereby enabling the development of psychological programs that will later benefit these athletes in subsequent academic research. In addition, the study contributes by providing psychometric measurement tools for the two phenomena under investigation.

Research problem:

The researcher's academic work in sports and training psychology within track and field has necessitated continued investigation and inquiry into the psychological problems encountered by track and field athletes. Through the researcher's observation of certain behaviors of visible annoyance manifested in athletes' actions within training and competitive environments after receiving instructions or criticism from coaches or teammates, it became evident that athletes need to activate thinking processes to benefit from such guidance and to overcome its distressing aspects. However, internal sensations, emotions, and athletes' thinking cannot be sufficiently diagnosed through observation alone to identify strengths and weaknesses unless measurement tools are employed. This calls for uncovering the reality of these issues by providing two measurement instruments suited to the athletes' specific context, and then identifying and interpreting the relationships between the phenomena in order to limit the escalation of negative emotions among athletes. Accordingly, the research problem is directed toward answering the following questions:

(1) What is the level of design thinking among athletes in selected track and field events?
(2) What is the level of excessive sensitivity to criticism among athletes in selected track and field events?
(3) Does design thinking contribute to reducing excessive sensitivity to criticism among athletes in selected track and field events?

Research Objectives:

1. To develop a design thinking scale and identify its level among athletes in selected track and field events.
2. To develop a scale measuring excessive sensitivity to criticism and identify its level among athletes in selected track and field events.
3. To examine the contribution of design thinking to reducing excessive sensitivity to criticism among athletes in selected track and field events.

Research Hypothesis:

1. The results of the design thinking scale are Importancely associated with, contribute to, and influence the results of the scale measuring the reduction of excessive sensitivity to criticism among athletes in selected track and field events.

Research Limits:

- **Human limits:** A sample of athletes in selected track and field events from Baghdad clubs participating in the sports season (2024–2025).
- **Time limits:** From 11/1/2025 to 27/2/2025.
- **Spatial limits:** The premises of selected track and field sports clubs in Baghdad Governorate.

Research Methodology and Field Procedures:

Research Method: The descriptive research method was adopted using the correlational approach.

Research Population and Sample:

The research population comprised athletes participating in selected track and field events in clubs of Baghdad Governorate (youth category), who were continuously training during the local sports season (2024/2025). The total number of athletes was (186), representing the population of the research problem in which the two psychometric phenomena under investigation were observed. These athletes participated in the following events: various sprint distances, various hurdle race distances, shot put, discus throw, and javelin throw. All athletes were intentionally selected using the comprehensive census

method (100%) as the main overall research sample. They were then divided into three samples according to the requirements of the present study. A random selection of (6) athletes was assigned to the exploratory sample, representing (3.223%) of the population. In addition, (95) athletes were randomly selected for the construction sample, representing (51.075%) of the population. The remaining athletes from the main sample were assigned to the primary research sample, totaling (85) athletes and representing (45.699%) of the population.

2. Methods and procedures

Fulfilling the requirements of the research necessitated taking into account what was stated in the current research problem regarding the essential need to diagnose the two psychometric phenomena under investigation and to measure them among athletes in selected track and field events. This was done so that the analysis could be conducted in numerical terms, enabling objective responses concerning their thinking and internal feelings. Accordingly, the researcher was prompted to develop two paper-and-pencil scales by following a scientific methodology to reach the required solutions through them. This was achieved by adhering to the following systematic procedural steps and statistical treatments:

- **Clarifying the rationale for construction:** The specificity of the research and its sample—athletes in selected track and field events in Baghdad clubs in particular—necessitated logical reasons for adopting the construction of the two main measurement instruments.
- **Determining the name and objective of each scale:** Based on the applicable measurement objectives and the target population, the two scales were named as follows:
  - Design Thinking Scale for Track and Field Athletes.
  - Excessive Sensitivity to Criticism Scale for Track and Field Athletes.
- Analyzing the common characteristics of the research population: It was found that the ages of the athletes in the target population for measurement ranged between (15–17) years, with training experience in their affiliated clubs ranging from (3–7) years. They are officially registered in the records of the Iraqi Central Athletics Federation and meet the specific criteria of the research. They also vary in their levels of academic achievement. Moreover, the specificity of the measurement excludes variables that are inherent to their particular characteristics.
- Adopting the theoretical framework to define the concepts of the two phenomena under investigation: The theoretical framework presented in the introduction and research problem of the current study was adopted as a reference for defining each concept in formulating and directing the scale items in a manner appropriate to the characteristics of the target athlete population.
- Conducting the preliminary preparation of the scale items: The researcher adhered to the conditions for formulating the items of the two paper-and-pencil scales, taking into account their specificity within sports psychology and the characteristics of the target sample. The content of the items was closed-ended with three response alternatives: (Always, Sometimes, Never), using a Likert-type scoring key with graded weights of (3, 2, 1), respectively.
- Verifying face and logical validity of the two scales: To verify this psychometric requirement, the researcher prepared a paper-based questionnaire to solicit the opinions of (17) experts in sports psychology and attached copies of the two scales. The experts unanimously agreed (100%) to retain the items as they were. These procedures were conducted during the period from Sunday, 11/1/2025, to Thursday, 16/1/2025. Through this procedure, face and logical validity were established for each scale, including their items, response alternatives, scoring keys, and instructions.
- **Conducting the pilot study of the two scales:** This pilot study was administered to the athletes of the previously specified exploratory sample, consisting of (6) athletes, at the premises of their affiliated clubs during the period from Sunday, 19/1/2025, to Thursday, 22/1/2025. The study served two main purposes: to identify any expected difficulties or obstacles that might be encountered when administering the two scales during the main survey study, and to calculate the mean time required to complete each scale for organizational purposes only. The average completion time was (9) minutes for each scale, totaling (18) minutes for both scales.
- **Verifying construct validity (discriminative power and internal consistency) of the two scales:** To fulfill this psychometric requirement, the two scales were administered to the construction sample consisting of (95) athletes during the period from Sunday, 26/1/2025, to Thursday, 6/2/2025. Item scores were tabulated, and statistical analyses were conducted as follows:
  - **First: Discriminative power of the two scales:** The researcher adopted the extreme groups

method. After ranking the item scores in descending order, a proportion of (27%) was applied to determine the size of the two equal extreme groups, resulting in (25.65) participants per group, which was rounded to (26). Statistical differences between the two groups were then examined using the independent samples *t*-test for each item in each scale, analyzed separately, as shown in the results of Tables 1 and 2 below.

- **Second:** Internal consistency of the two scales: To verify the second condition of construct validity, the scores of the construction sample athletes were statistically analyzed using Pearson's simple correlation coefficient between each item score and the total score of the scale to which it belongs, as shown in the results of Tables 3 and 4 below.

○ **Verification of the reliability of the two scales:** The reliability of the two measurement scales

Table 1. Shows the results of the discriminative power of the items of the Design Thinking Scale.

Item Sequence and the Extreme Groups		Statistical Comparison Between the Scores of the Extreme Groups						
		N	Mean (x̄)	SD (±)	t	Sig.	Difference	Item Status
1	Increase	26	2.12	0.326	6.278	0.000	Importance	Discriminative
	Decrease	26	1.38	0.496				
2	Increase	26	2.62	0.496	8.598	0.000	Importance	Discriminative
	Decrease	26	1.42	0.504				
3	Increase	26	2.65	0.485	9.718	0.000	Importance	Discriminative
	Decrease	26	1.35	0.485				
4	Increase	26	2.69	0.471	8.492	0.000	Importance	Discriminative
	Decrease	26	1.54	0.508				
5	Increase	26	2.08	0.272	7.805	0.000	Importance	Discriminative
	Decrease	26	1.27	0.452				
6	Increase	26	2.62	0.496	13.868	0.000	Importance	Discriminative
	Decrease	26	1.08	0.272				
7	Increase	26	2.69	0.471	8.761	0.000	Importance	Discriminative
	Decrease	26	1.50	0.510				
8	Increase	26	2.42	0.504	9.737	0.000	Importance	Discriminative
	Decrease	26	1.19	0.402				
9	Increase	26	2.35	0.485	5.861	0.000	Importance	Discriminative
	Decrease	26	1.54	0.508				
10	Increase	26	2.35	0.485	6.419	0.000	Importance	Discriminative
	Decrease	26	1.46	0.508				
11	Increase	26	2.31	0.471	3.608	0.001	Importance	Discriminative
	Decrease	26	1.92	0.272				
12	Increase	26	2.23	0.430	8.391	0.000	Importance	Discriminative
	Decrease	26	1.23	0.430				
13	Increase	26	2.27	0.452	9.754	0.000	Importance	Discriminative
	Decrease	26	1.15	0.368				
14	Increase	26	2.31	0.471	10.620	0.000	Importance	Discriminative
	Decrease	26	1.12	0.326				
15	Increase	26	2.54	0.508	7.946	0.000	Importance	Discriminative
	Decrease	26	1.42	0.504				
16	Increase	26	2.19	0.402	6.848	0.000	Importance	Discriminative
	Decrease	26	1.35	0.485				
17	Increase	26	2.42	0.504	8.689	0.000	Importance	Discriminative
	Decrease	26	1.27	0.452				
18	Increase	26	2.58	0.504	7.946	0.000	Importance	Discriminative
	Decrease	26	1.46	0.508				
19	Increase	26	2.69	0.471	8.761	0.000	Importance	Discriminative
	Decrease	26	1.50	0.510				
20	Increase	26	2.54	0.508	14.036	0.000	Importance	Discriminative
	Decrease	26	1.04	0.196				
21	Increase	26	2.15	0.368	8.998	0.000	Importance	Discriminative
	Decrease	26	1.19	0.402				
22	Increase	26	2.65	0.485	8.093	0.000	Importance	Discriminative
	Decrease	26	1.54	0.508				

Item discrimination: (Sig) > (0.05) at the significance level (0.05) and degrees of freedom (50).

Table 2. Shows the results of the discriminative power of the items of the excessive sensitivity to criticism scale.

Item Sequence and the Extreme Groups		Statistical Comparison Between the Scores of the Extreme Groups						
		N	Mean ($\bar{x}$)	SD ($\pm$)	*t*	Sig.	Difference	Item Status
1	Increase	26	2.69	0.471	9.058	0.000	Importance	Discriminative
	Decrease	26	1.46	0.508				
2	Increase	26	2.73	0.452	8.689	0.000	Importance	Discriminative
	Decrease	26	1.58	0.504				
3	Increase	26	2.88	0.326	13.844	0.000	Importance	Discriminative
	Decrease	26	2.00	0.000				
4	Increase	26	2.65	0.485	11.829	0.000	Importance	Discriminative
	Decrease	26	1.19	0.402				
5	Increase	26	2.73	0.452	8.471	0.000	Importance	Discriminative
	Decrease	26	1.62	0.496				
6	Increase	26	2.46	0.508	9.986	0.000	Importance	Discriminative
	Decrease	26	1.19	0.402				
7	Increase	26	2.38	0.496	5.370	0.000	Importance	Discriminative
	Decrease	26	1.65	0.485				
8	Increase	26	2.31	0.471	6.542	0.000	Importance	Discriminative
	Decrease	26	1.42	0.504				
9	Increase	26	2.35	0.485	7.833	0.000	Importance	Discriminative
	Decrease	26	1.31	0.471				
10	Increase	26	2.38	0.496	8.964	0.000	Importance	Discriminative
	Decrease	26	1.23	0.430				
11	Increase	26	2.35	0.485	10.738	0.000	Importance	Discriminative
	Decrease	26	1.12	0.326				
12	Increase	26	2.27	0.452	3.518	0.001	Importance	Discriminative
	Decrease	26	1.88	0.326				
13	Increase	26	2.31	0.471	8.111	0.000	Importance	Discriminative
	Decrease	26	1.27	0.452				
14	Increase	26	2.35	0.485	4.358	0.000	Importance	Discriminative
	Decrease	26	1.81	0.402				
15	Increase	26	2.58	0.504	6.220	0.000	Importance	Discriminative
	Decrease	26	1.77	0.430				
16	Increase	26	2.23	0.430	4.308	0.000	Importance	Discriminative
	Decrease	26	1.69	0.471				
17	Increase	26	2.46	0.508	7.730	0.000	Importance	Discriminative
	Decrease	26	1.38	0.496				
18	Increase	26	2.62	0.496	7.488	0.000	Importance	Discriminative
	Decrease	26	1.58	0.504				
19	Increase	26	2.19	0.402	11.723	0.000	Importance	Discriminative
	Decrease	26	1.08	0.272				
20	Increase	26	2.12	0.326	2.311	0.025	Importance	Discriminative
	Decrease	26	1.92	0.272				
21	Increase	26	2.08	0.272	6.701	0.000	Importance	Discriminative
	Decrease	26	1.35	0.485				
22	Increase	26	2.12	0.326	2.554	0.041	Importance	Discriminative
	Decrease	26	1.88	0.326				

Item discrimination: (Sig) > (0.05) at the significance level (0.05) and degrees of freedom (50).

was examined through statistical analysis of the scores obtained from their administration to the construction sample in the present study, using Cronbach's alpha coefficient. The results indicated a high level of internal consistency, with a reliability coefficient of 0.911 for the Design Thinking Scale and 0.942 for the Excessive Sensitivity to Criticism Scale. These coefficients were calculated at 93 degrees of freedom and a significance level of 0.05, demonstrating that both scales possess a strong degree of reliability suitable for research purposes.

- **Verification of the normal distribution of the two scales:** To assess the suitability of each scale for application to the target sample of athletes in selected track and field events, the scores of both scales obtained from the construction sample were subjected to statistical analysis to determine whether they conformed to a normal (Gaussian) distribution. The results of this

Table 3. Shows the internal consistency of the correlation between each item score and the total score of the Design Thinking Scale.

Item No.	Correlation Value Between Item and Total Scale Score	(Sig)	Item No.	Correlation Value Between Item and Total Scale Score	(Sig)
1	0.663*	0.000	12	0.685*	0.000
2	0.502*	0.000	13	0.852*	0.000
3	0.732*	0.000	14	0.589*	0.000
4	0.572*	0.000	15	0.939*	0.000
5	0.553*	0.000	16	0.534*	0.000
6	0.633*	0.000	17	0.566*	0.000
7	0.506*	0.000	18	0.701*	0.000
8	0.624*	0.000	19	0.643*	0.000
9	0.701*	0.000	20	0.478*	0.000
10	0.499*	0.000	21	0.559*	0.000
11	0.563*	0.000	22	0.666*	0.000

__Item internal consistency:__ (Sig) > (0.05) at degrees of freedom (93) and a significance level of (0.05).

Table 4. Shows the internal consistency of the correlation between the items and the total score of the Excessive Sensitivity to Criticism Scale.

Item No.	Correlation Value Between Item and Total Scale Score	(Sig)	Item No.	Correlation Value Between Item and Total Scale Score	(Sig)
1	0.722*	0.000	12	0.485*	0.000
2	0.639*	0.000	13	0.541*	0.000
3	0.511*	0.000	14	0.875*	0.000
4	0.765*	0.000	15	0.482*	0.000
5	0.693*	0.000	16	0.641*	0.000
6	0.602*	0.000	17	0.573*	0.000
7	0.561*	0.000	18	0.557*	0.000
8	0.666*	0.000	19	0.653*	0.000
9	0.672*	0.000	20	0.667*	0.000
10	0.626*	0.000	21	0.575*	0.000
11	0.581*	0.000	22	0.665*	0.000

*__Item internal consistency:__ (Sig) > (0.05) at degrees of freedom $(n-2)=(93)$ and a significance level of (0.05).

analysis, as presented in Table 5, confirmed that the data for both scales met the assumptions of normality, thereby supporting their appropriateness for subsequent statistical analyses.

The distribution is considered normal when the skewness value falls within (±1).

Upon completing the construction procedures and statistical analyses on the construction sample, each scale reached its final form (Appendices A and B), with a total score for each scale ranging from (22–66) and a hypothetical mean of (44). This indicates that the higher an individual's score on either scale, the higher the level of the measured phenomenon among the responding athlete.

- **Conducting the main survey study (application of the two scales):**The survey procedures were carried out during the period from Sunday, 9/2/2025, to Thursday, 27/2/2025, on the main application sample consisting of (85) athletes at the premises of their affiliated clubs. Direct measurement of the two investigated phenomena was conducted, and the data for each of the two paper-based scales were recorded and tabulated separately.
- **Statistical methods:** The data were processed electronically using the SPSS software to extract percentages, means, standard deviations, the independent samples *t*-test, Pearson's simple correlation coefficient, Cronbach's alpha formula, Pearson's skewness coefficient, the one-sample *t*-test, and the linear regression coefficient.

3. Results

Unit of measurement: score. The difference is Importance, as (Sig) > (0.05) at degrees of freedom $(n-1)=(84)$ and a significance level of (0.05).

The *F* value is Importance when the (Sig) value is > (0.05) at the significance level of (0.05).

Table 5. Presents the final statistical parameters and the values of the normal distribution for each scale.

Scale Name	Construction Sample Size	Number of Items	Total Score	Mean	Standard Deviation	Skewness
Design Thinking	95	22	66	47.58	1.568	0.662
Excessive Sensitivity to Criticism	95	22	66	38.36	1.798	-0.633

Table 6. Shows the results of the level of each phenomenon by comparing the mean score of each scale with its hypothetical mean.

Scale	Total Score	Hypothetical Mean	Mean	Standard Deviation	Mean Difference	*t*	(Sig)	Significance
Design Thinking	66	44	47.60	1.685	3.600	19.701	0.000	Importance
Excessive Sensitivity to Criticism	66	44	38.45	1.836	−5.553	27.891	0.000	Importance

4. Discussion

A review of the results presented in Table 6 indicates that athletes in selected track and field events within the application sample demonstrated an acceptable level of design thinking, as the mean score exceeded the hypothetical mean of the scale. Conversely, the results of the same table revealed an acceptable level of excessive sensitivity to criticism, given that the mean score of its scale did not exceed its hypothetical mean. Furthermore, the results of the regression model presented in Tables 7 to 9 showed a statistically Importance correlation, contribution, and effect of the design thinking scale scores on the scores of reducing excessive sensitivity to criticism among athletes in selected track and field events. These findings suggest that an increase in the level of design thinking contributes to a reduction in the level of excessive sensitivity to criticism among these athletes. The remaining percentage of contribution is attributed by the researcher to random, unexamined factors.

Regarding the levels and correlation of the two investigated phenomena, the researcher attributes the emergence of the design thinking results to the inclination of the athletes in the application sample to consistently view their steps toward success in their club events as facilitating the pursuit of correct thinking strategies, reflecting an optimistic outlook. However, this optimism is not achieved through wishful thinking alone; rather, it requires perseverance and sustained effort. The athletes consistently prepare their minds to receive information that aids in improving their performance with alertness, focus their thinking accordingly, and readily acquire experience. They frequently generate ideas in new and creative forms by linking effective experiences, enabling them to confront obstacles effectively. They continuously seek new ideas and explorations that help them address the questions posed to them, and they sometimes recognize the value of corrective information for developing their performance in their affiliated sports clubs. At times, they recall guidance related to improving their performance in their specialized track and field events and benefit from the performance of their peers in this developmental process.

These results clearly contributed to the patterns observed in their responses to the items of the Excessive Sensitivity to Criticism Scale. This was evident in their tendency to sometimes feel intellectual isolation from others in their affiliated sports clubs, to occasionally adopt negative perceptions of others' intentions within the club, and to feel a lack of moral support in this sports environment. At times, they feel that their ideas are not adequately listened to,

Table 7. Shows the results of the correlation between the scores of the two scales, the simple linear regression, the percentage of contribution, and the standard error.

Influencing Variable	Affected Variable	Simple Correlation Coefficient (R)	Linear Regression Coefficient R^2 (Coefficient of Determination)	Contribution Percentage	Standard Error of Estimate
Design Thinking	Excessive Sensitivity to Criticism	0.927	0.859	0.858	0.692

N = 85.

Table 8. Shows the results of the F-test for examining the goodness of fit of the linear regression model for the scores of the two scales.

Influencing Variable	Affected Variable	Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*	(Sig)	Significance
Design Thinking	Excessive Sensitivity to Criticism	Regression	243.224	1	243.224	507.384	0.000	Importance
		Error	39.788	83	0.479			

Table 9. Shows the results of the estimated values of the constant term and the slope (effect) for the scores of the two scales.

Dependent Variable	Variables	Beta (β)	Standard Error	t	(Sig)	Significance
Excessive Sensitivity to Criticism	Constant	86.526	2.136	40.513	0.000	Importance
	Design Thinking	−1.01	0.045	22.525	0.000	Importance

experience difficulty forming friendships or strengthening relationships with peers due to limited mutual understanding, and sometimes feel lonely or excluded from important dialogues and discussions. Such experiences affect the effectiveness of their role and presence in the club and are reflected in their discomfort in social situations with fellow athletes. Occasionally, they prefer solitude due to difficulties in understanding others' problems, and they consistently exhibit sensitivity to criticism from their coaches and peers within the sports club.

Overall, the interrelated responses across the two psychometric scales indicate that design thinking plays an effective role in reducing excessive sensitivity to criticism among athletes in selected track and field events.

For an individual's determination to achieve legitimate and noble goals generates a capacity to overcome many psychological sensitivities that may reduce the level of concentration on those goals; therefore, supporting design thinking is considered a mental and psychological phenomenon of great importance in strengthening personality" (Fouad, 2014, p. 50).

Moreover, "the psychological factor plays a highly important role in achieving better outcomes through the availability of certain traits, including desire, willpower, realism, and others, in order to cope with changing situations and conditions" (Vinney, 2019, p. 3).

Likewise, "the ability to accurately perceive emotions during situations involves remaining at the peak of responses to those situations, challenges, and individuals. On the other hand, high self-awareness requires readiness to ****URDU FONT***** the reflection of emotions, which may be negative" (Al-Khalidi, 2014, p. 34).

Indeed, "an athlete's confidence in his or her abilities represents an important positive source for achieving positive psychological energy" (Yaseen, 2021, p. 101).

Furthermore, "through design thinking, it is possible to redraw the map of interactive creative ideas and control behaviors that achieve goals through a series of coherent and aligned steps" (Saeed, 2018, p. 112).

Additionally, "sustained high mental efforts that require cognitive functions to cope with levels of psychological and physical stress—resulting from engaging in such mental activities—place a burden on the brain in terms of interpretation and evaluation. This burden manifests in symptoms such as reduced concentration and the commission of errors while performing complex cognitive tasks or executing skills that require precision and accuracy" (Soto & Straus, 2011, p. 47).

It is also possible to reduce an individual's excessive sensitivity to criticism through self-review, changing thinking pathways, overcoming intellectual rigidity toward others by means of cognitive flexibility, and generating more creative ideas that are closely aligned with reality" (Marwan, 2023, p. 19).

Indeed, "thinking based on information from a single channel causes the individual to become sensitive to others' reactions toward his or her decisions or to criticism of those decisions. Diversifying information about events and aligning it with reality grants the individual confidence in his or her actions and protects talents and aspirations from destructive criticism in achieving goals" (Yaseen, 2021, p. 96).

Moreover, "human thinking corresponds to the magnitude of developments and problems encountered, and one form of such thinking is the integration of sensations with perceptions and how these perceptions are subsequently used" (Medin & Ross, 2006, p. 152).

Likewise, "building an athlete's psychological resilience in changing many irrational ideas that generate pessimism and assisting him or her in confronting psychological situations and threats depends on the extent of the athlete's capacity for visualization—whether through gradual imagery when facing a feared situation, constructing a new successful scenario, or refuting an irrational, negative, pessimistic idea" (Al-Bilawi, 2015, p. 19).

"Thinking is formed through the interaction of environmental elements in which situations and experiences interact. Thinking occurs in various forms and patterns—verbal, symbolic, quantitative, spatial, or formal—each with its own characteristics" (Nofal & Al-Rimawi, 2010, p. 26).

Furthermore, "the ability to accurately perceive emotions during situations involves remaining at the peak of responses to situations, challenges, and individuals. Conversely, high self-awareness requires readiness to tolerate the reflection of emotions that may be negative" (Al-Khalidi, 2014, p. 34).

On the grounds that "the primary function of ideas is to enable the individual to predict events and develop methods that help control what occurs in life" (Al-Sa'dawi, 2021, p. 166).

Indeed, "design thinking provides the individual with numerous creative opportunities that go beyond the limits imposed by evaluators; the more design-oriented the thinking, the more signs of maturity appear" (Bakri, 2017, p. 62).

Likewise, "thinking represents the highest manifestation of mental activity that distinguishes humans from other creatures. The effects of such thinking have been clearly embodied in the development of civilization across ages. Through thinking, the mind organizes experiences, enabling it to find new solutions to problems and to understand relationships in renewed ways" (Al-Ghariri & Al-Abadi, 2020, p. 9).

Additionally, "the overly sensitive individual causes a disruption in group cohesion, reduces the likelihood of achieving shared goals, and becomes exposed to insincere emotions from others aimed at appeasement, which in turn distorts realistic appraisal and evaluation of events" (Burhan, 2019, p. 103).

5. Conclusions

1. The Design Thinking Scale is valid for its intended purpose and can be adopted to measure this phenomenon among athletes in selected track and field events.
2. The Excessive Sensitivity to Criticism Scale is valid for its intended purpose and can be adopted to measure this phenomenon among athletes in selected track and field events.
3. Athletes in selected track and field events possess an acceptable level of design thinking.
4. Athletes in selected track and field events possess an acceptable level of excessive sensitivity to criticism.
5. An increase in the level of design thinking contributes to a reduction in the level of excessive sensitivity to criticism among athletes in selected track and field events, through a correlational relationship whose increase yields a positive effect on them.

6. Recommendations

1. It is necessary to pay attention to psychological programs based on developing design thinking among track and field athletes due to its contribution to reducing their level of excessive sensitivity to criticism.
2. It is necessary to emphasize periodic psychological assessment of mental and psychological factors among track and field athletes in order to address psychological problems before they worsen.
3. It is necessary to enhance track and field coaches' experience in considering athletes' feelings to avoid the escalation of excessive sensitivity to criticism.

Conflicts of interest

None.

Ethical clearance

This manuscript approved by **Lecturer Dr. Liqaa Abdulzahra Obaid** on (11/01/2025).

Author's contributions

All contributions of this study were done by the researchers **Lecturer Dr. Liqaa Abdulzahra Obaid** who get the main idea and work on writing and concluding also with number of experts, **Prof. Dr. Aayed Al-Nasrawi** in Statistics, **Lecturer Dr. Baidaa Tareq** in revision.

Funding

This research received no external funding.

Data Availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

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Appendix

A. Illustrates the final form of the design thinking scale for track and field athletes

No.	Item Statements	Always	Sometimes	Never
1	I believe that my steps toward success in my event at the sports club will go well because I follow correct steps.			
2	I believe that my future professional goals in my event at the sports club will be achieved through perseverance and continuous effort.			
3	I direct my senses to receive information that develops my performance level in my event at the sports club.			
4	I prepare my mind to receive information on how to develop my performance level in my event at the sports club.			
5	I organize in my memory information related to developing my performance level in my event at the sports club.			
6	I focus my thinking on developing my performance level in my event at the sports club away from distractions.			
7	I easily acquire experience on how to develop my performance level in my event at the sports club.			
8	I recall my ideas to understand the information I receive about developing my performance level in my event at the sports club.			
9	I link my previous experiences with similar current situations to apply what helps me develop my performance level in my event at the sports club.			
10	I am able to face obstacles that hinder developing my performance level in my event at the sports club with ease.			
11	I obligate myself to think in a way that leads me to information that develops my performance level in my event at the sports club.			
12	I anticipate the results of developing my performance level in my event at the sports club before participating in competitions.			
13	I am able to conduct self-evaluation of my performance level in my event at the sports club.			
14	I realize the value of corrective information for developing my performance level in my event at the sports club.			
15	I easily answer questions posed about how I develop my performance level in my event at the sports club.			
16	I recall ideas that support developing my performance level in my event at the sports club.			
17	I retrieve from my memory comprehensive information suitable for developing my performance level in my event at the sports club.			
18	I remember my previous information about how to develop my performance level in my event at the sports club.			
19	I quickly remember guidance about developing my performance level in my event at the sports club.			
20	I am able to compensate for forgetting information related to developing my performance level in my event at the sports club.			
21	I benefit from my teammates' performance to develop my performance level in my event at the sports club.			
22	I benefit from the success steps related to developing my performance level in my event at the sports club.			

B. Illustrates the final form of the excessive sensitivity to criticism scale for track and field athletes

No.	Item Statements	Always	Sometimes	Never
1	I feel isolated from the ideas of my fellow athletes in the sports club.			
2	I feel that those in the sports club try to undermine my successes with their non-objective opinions.			
3	I feel that I have no one to support me in the sports club.			
4	I feel that my opinions and ideas are not listened to in the sports club.			
5	I believe that others ignore me in collective decisions in the sports club.			
6	I find it difficult to form friendships within the sports club environment.			
7	I feel unable to build strong relationships with my fellow athletes in the sports club.			
8	I feel that my peer athletes in the sports club do not understand me well.			
9	I believe that my feelings and ideas are often misunderstood by my peer athletes in the sports club.			
10	I find myself alone much of the time in the sports club.			
11	I feel excluded from important conversations and discussions in the sports club.			
12	I feel that I do not have an important role in the sports club.			
13	I believe that my presence in the sports club does not have a Importance impact on the club's future.			
14	I feel tense when interacting with my fellow athletes in the sports club.			
15	I feel uncomfortable in social situations with my peer athletes in the sports club.			
16	I feel frustrated when I try to communicate with my peer athletes in the sports club and receive no response.			
17	I feel that my relationship with my peer athletes in the sports club is superficial and does not go beyond the training environment.			
18	I find it difficult to understand the problems of my peer athletes in the sports club.			
19	I feel comfortable when I am away from group gatherings in the sports club.			
20	I feel that I am not invited to participate in competitions in which the sports club takes part.			
21	I am sensitive to criticism and guidance from my coach in the sports club.			
22	I am sensitive to criticism and guidance from my peer athletes in the sports club.			

مساهمة التفكير التصميمي في الحد من الحساسية المفرطة للنقد لدى الرياضيين في بعض مسابقات ألعاب القوى المختارة

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المستخلص

سعت الدراسة إلى بناء مقياسين، هما التفكير التصميمي والشعور بالحساسية الزائدة للنقد، والتعرّف على مستوياتهما لدى الرياضيين المشاركين في بعض فعاليات ألعاب القوى المختارة. كما هدفت إلى الكشف عن دور التفكير التصميمي في الحدّ من فرط الحساسية للنقد لدى هؤلاء الرياضيين .اعتمدت الدراسة المنهج الوصفي باستخدام أسلوب العلاقات الارتباطية . وتكوّن مجتمع البحث من لاعبي ألعاب القوى في بعض الفعاليات المختارة، الممثلين لأندية محافظة بغداد ضمن فئة الشباب، والمواظبين على التدريب خلال الموسم الرياضي المحلي. بلغ عدد أفراد المجتمع (186) لاعبًا، موزعين على فعاليات العدو لمسافات مختلفة، وسباقات الحواجز بمسافاتها المتنوعة، وفعالية دفع الثقل، ورمي القرص، ورمي الرمح .تم اختيار جميع أفراد المجتمع عمدًا ليكونوا العينة الرئيسة للبحث، حيث قُسِّمت العينة إلى ثلاث عينات فرعية. وقد جرى تحليل البيانات باستخدام برنامج .SPSSأظهرت النتائج أن مقياسي التفكير التصميمي وفرط الحساسية للنقد يتمتعان بدرجة مناسبة من الصدق والثبات، مما يتيح استخدامهما بثقة في قياس هذين المتغيرين لدى لاعبي ألعاب القوى في الفعاليات المختارة. كما بينت النتائج أن أفراد العينة يمتلكون مستويات مقبولة من التفكير التصميمي ومن فرط الحساسية للنقد، مع وجود علاقة ارتباط عكسية ذات دلالة إحصائية بين المتغيرين، إذ ارتبط ارتفاع مستوى التفكير التصميمي بانخفاض مستوى فرط الحساسية للنقد.

الكلمات المفتاحية: التفكير التصميمي؛ الشعور بالحساسية الزائدة للنقد؛ ألعاب القوى