

An Exploration Into the Impact of Equine Stakeholders' Curiosity-Driven Behavior on Equine Training Approach Choice, Learning Theory Awareness, and Application

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Abstract

Gaps in equine stakeholders' understanding and application of learning theory principles continue to be identified within the equestrian industry. Differences in curiosity-driven behavior and engagement with diverse training approaches may contribute to variation in learning theory awareness and application. This study aimed to investigate relationships between stakeholder curiosity, training method choice reasoning, learning theory awareness, and practical application of learning theory principles. A questionnaire survey was completed by 52 equine stakeholders. Participants self-rated their learning theory awareness using a Numerical Rating Scale (NRS; 1–10) and completed a series of questions assessing learning theory definition knowledge and scenario-based application. Participants also reported the training methods they used and their reasoning for selecting them. Responses were categorized into curiosity groups (1 = not curious, 2 = somewhat curious, 3 = curious) based on the number of training approaches selected. Data were assessed for normality using Shapiro–Wilk tests. Depending on the data distribution, Kruskal–Wallis or one-way ANOVA tests were used to examine associations between curiosity level and three learning theory outcomes: self-rated awareness, definition knowledge, and scenario-based application. Higher curiosity levels were significantly associated with greater learning theory awareness ($H(2) = 9.04, P = 0.01$), learning theory definition scores ($H(2) = 15.28, P = 0.01$), and scenario-based learning theory application scores ($F(2, 27.27) = 22.21, P < 0.01$). Participants categorized as more curious demonstrated stronger overall performance across all learning theory outcome measures. Training method choice reasoning was not significantly associated with any learning theory outcome measure. These findings suggest that greater behavioral diversity in training approach engagement is associated with stronger learning theory awareness and application. Educational initiatives that promote critical exploration of training methodologies may help support engagement with learning theory and welfare-oriented practices.

Keywords

Equestrian; performance; psychology; horse–human dyad; teaching

1. Introduction

1.1. The Impact of Curiosity on Learning and Decision Making

'Curiosity' is described as "a state of cognitive deprivation that arises from an information gap between what one presently

knows and what one desires to know" [1,2]. Previous research has shown that curiosity elicits arousal that motivates individuals to act and explore when seeking information [2–5]. Epistemic curiosity, specifically, refers to the desire to acquire new knowledge (e.g., concepts, ideas, facts) that stimulates intellectual interest [2,6,7].

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Curiosity plays a significant role in human learning, influencing both its efficacy and longevity [1–3,5] and has been previously described as "a drive that determines how we consume information in a world where information abounds" [1,2,8]. The adaptive value of curiosity is well documented in relation to academic achievement, learning enhancement, and memory retention [9–11]. Behavioral diversity and curiosity-driven behavior have shown a positive influence across various domains, including primary education [5], engineering creativity [12], consumer behavior [13], question-generation skills [14], and scientific literacy [6]. This diversity also plays a role in managing uncertainty [15], social media use [16], and information-seeking behavior [17].

While the influence of curiosity is well supported, behavioral diversity and curiosity vary by personality traits (e.g., openness to experience) and across life stages [18]. Neurobiologically, curiosity enhances memory formation and recall via activation of the hippocampus, prefrontal cortex, and dopaminergic pathways. These insights suggest that curiosity is shaped by developmental and contextual factors, which could be considered in educational environments [19–21]. The potential role of curiosity in human–horse interactions warrants further investigation [22].

1.2. Equestrian Learning Theory and Welfare Influence

Research in equestrianism has focused on developing welfare-driven training, behavior modification, and handling practices [23–25]. Evidence shows that training methods can positively or negatively affect equine welfare and the human–horse relationship [4,26–28]. Training methods are often debated regarding their outcomes and their capacity to foster effective human–animal partnerships [29,30].

Recent findings have emphasized the need for welfare-based strategies that integrate learning theory and behavioral education from horses' early life, supporting long-term well-being [31,32]. The term "Learning Theory" refers to the processes through which animals learn, absorb, and acquire information and is commonly applied to horses [18].

Targeted exploration identified how owner demographics and industry roles affect training beliefs, theoretical knowledge, and method justification [22,33]. Variables such as age, gender, activity type, and prior education all influenced learning theory awareness and willingness to adopt evidence-based methods [22,33]. Interestingly, owners' belief in the validity of scientific methods correlated with reduced use of aversive training and welfare-driven methodologies. To advance welfare-aligned practice, it may be beneficial to investigate what motivates equestrians to pursue education and how curiosity influences such decisions. This could lead to targeted educational strategies grounded in behavioral change and motivational theory, aiming to inspire curiosity as a transformative driver within the industry [22,33–36].

1.3. Professional and Trainer Learning Theory Knowledge

Identifying how people learn, develop curiosity-driven behavior, and absorb information has long been studied in pedagogical research [1,3,17,24,37–40]. The influence of instructors and coaches on student learning and curiosity is well documented [37,41].

In contrast to equestrianism, engineering instructors' approaches directly create, maintain, and expand student curiosity, intellectual dexterity, and creativity through their students' academic and personal development [12,42]. In animal science fields, such pedagogical research is emerging. For instance, veterinary nursing students who received targeted learning theory education were more likely to apply humane restraint techniques and felt more confident doing so [43]. Identified gaps in equestrian education have been identified to support proposed reforms that include more diverse and welfare-driven training and behavior support philosophies [43]. Recent research continues to confirm the equestrian coach's role in supporting behavior change in the owner or rider, being an advocate for the horse within horsemanship education, and the practitioner being an ambassador for best practice [5,34,44,45]. This development in pedagogical practice, focusing on evidence-based and critically reflective practices, could foster curiosity, autonomy, and ultimately, better welfare outcomes for all members of the dyad.

Historically, coach and professional learning theory knowledge has revealed significant gaps in conjunction with student knowledge [25,43,46–49]. For example, early research highlighted that 2.8% of coaches could accurately explain positive reinforcement, with a similarly low understanding of other principles (11.9% for negative reinforcement) [46]. The above findings were echoed [25], showing how professional equestrians differ in their explanation and application of learning theory. The higher scores in negative reinforcement and lower scores for positive reinforcement also mirror industry approaches and training methodologies built upon a foundation of negative reinforcement and positive punishment [18,25]. Although knowledge and clarity in terminology are not the sole standards by which to measure practitioner skill or a reflection of current practical approaches, having foundational knowledge of the underpinning science in any animal-based field can be imperative for the continued development of welfare- and well-being-supportive methodologies, including human behavior that supports their integration.

Although knowledge in this area continues to evolve, this evidence suggests that progress in translating research into practice may be limited. Consequently, greater scrutiny could be directed toward coach education materials and training resources to identify persistent knowledge gaps and evaluate how factors such as epistemic curiosity influence the uptake of welfare-oriented, evidence-based training approaches [5,25,32,50]. Emerging research critically examines current equestrian qualification frameworks, including British Horse Society examinations, which underpin much of coach education. This work explores the role these qualifications play in shaping equestrian industry standards and assesses how effectively they incorporate contemporary learning science, particularly the principles promoted by the International Society for Equitation Science (ISES) [50].

If experts and educators do not provide accurate information, and if industry members do not expand their understanding, the resulting knowledge gap may compromise horse welfare, owner outcomes, and professional safety in training and behavior management. Educational interventions show promise: video and leaflet formats have

been shown to improve participants' grasp of key concepts, suggesting that broader access could help close these gaps [25]. Ongoing research suggests that focusing on the Five Domains welfare model, the ISES First Training Principles, learning theory, and species-specific ethology could ensure that practitioners are accurately equipped with welfare- and learning-driven evidence with application in practice [25,50]. This is a key starting position for exploring education as an influencing factor on behavior change in equestrianism, with opportunities for continued exploration and discussion as a way of building the desire to ask further questions and critique the status quo.

Epistemic curiosity may be central to addressing these deficiencies while also exploring the role of behavioral diversity in the selection and justification of welfare- and well-being-oriented equine training and management approaches. As previously noted [8], highly curious individuals are more likely to integrate knowledge across domains. To the authors' knowledge, no previous research has directly examined the relationship between epistemic curiosity and training method selection in equestrian contexts. Therefore, establishing a baseline of current knowledge and curiosity is essential before exploring large-scale initiatives. This study aims to examine how stakeholder curiosity shapes learning theory knowledge, application, and training method choices.

2. Materials and Methods

2.1. Survey Design

A Google Forms survey, including demographic information, behavior, learning, and training-based questions, was made available to equine stakeholders (owners, professionals, educators, etc.) over the age of 18. The survey, containing six sections and a mix of open- and closed-ended questions (e.g., comments, multiple-choice questions, checkboxes, and numeric rating scales from 1 to 10), was distributed through multiple equine-specific Facebook groups. The posts were refreshed every other day for three weeks to keep the survey at the top of each group's posts, and the survey took no longer than 15 minutes to complete.

Respondents rated their perceived awareness of learning theory knowledge from 1 to 10 (1 = no knowledge; 10 = expert in the field). Respondents' subjective learning theory knowledge was measured through multiple-choice questions covering nine key learning theory terms to evaluate individual definition knowledge: Reinforcement, Punishment, Positive Reinforcement, Negative Reinforcement, Positive Punishment, Negative Punishment, Habituation, Shaping, and Systematic Desensitization (**Figure 1** and **Figure 2**). Sections 3 (Awareness of Learning Theory) and 4 (Learning Theory Definitions and Scenarios) were created based on a similar framework previously standardized [25], exploring learning theory knowledge in UK-based equestrians through questionnaire formats (**Supplementary Materials**).

Respondents read six different training and management scenarios in which they were required to identify the types of reinforcement or punishment that occurred through checkboxes and were able to select as many options as they deemed appropriate. Summative scores were collated and further analyzed, assessing individual subjective knowledge and learning theory application. Learning theory definition

scores were marked out of nine (1 point per question), and learning theory application scores were marked out of eleven (1 point was given for each correct type of operant conditioning identified). The two scores were compared with the participants' awareness of learning theory principles to provide a basis for comparing self-reported and tested understanding. Definitions of the operant conditioning quadrants and learning theory terminology were included in Section 3 of the survey (**Table 1** and **Table 2**). Ratings and scores for both tests were translated into percentages (0–100%) to allow for further comparison and statistical testing.

Level of curiosity was measured by respondents' responses to question 1a in section 3 ("What training methods do you use? (select as many as are appropriate.)"). Responses were organized into predefined categories. Due to the exploratory nature of the study, formal inter-rater reliability was not assessed. The three curiosity categories included Not Curious (1 training method selected), Somewhat Curious (2 training methods selected), and Curious (3 or more training methods selected).

The responses were tallied within these categories, and a count was created for each category. Training method choice reasoning responses were analyzed using thematic coding. Responses were first reviewed and familiarized with to identify recurring patterns and concepts. Initial codes were generated from participants' written explanations and subsequently grouped into broader themes based on the similarity of their meaning. Through an iterative review process, four final categories were established: (0) did not respond, (1) always used these methods, (2) improving horse performance, and (3) improving horse welfare. Each response was assigned to the category that best reflected the primary rationale provided by the participant. Frequencies for each category were then calculated and used in subsequent statistical analyses.

2.2. Statistical Analysis

The survey revealed a confidence interval of 95% CI [35%, 49%]. This estimate was based on a sample of 70 individuals drawn from a population of 5,000 equine stakeholders. The margin of error was calculated using the standard error of the proportion with a finite population correction.

Data were exported and analyzed using R Software and Microsoft Excel. Summative scores were analyzed to assess individual subjective knowledge and learning theory application. Normality was assessed using Shapiro–Wilk tests. Where assumptions of normality were violated, nonparametric analyses (Kruskal–Wallis tests) were conducted. Variables meeting the assumptions of normality were analyzed using one-way ANOVA.

This approach examined the effect of curiosity level on three dependent variables in separate tests: (1) Learning Theory Awareness, (2) Learning Theory Definition Scores, and (3) Learning Theory Scenario Scores. Within this analysis, the curiosity level was categorized into three groups (Not Curious (1 training method selected), Somewhat Curious (2 training methods selected), and Curious (3 or more training methods selected)). Curiosity level was treated as the independent variable, and learning theory awareness, definition scores, and scenario scores were treated as dependent variables.

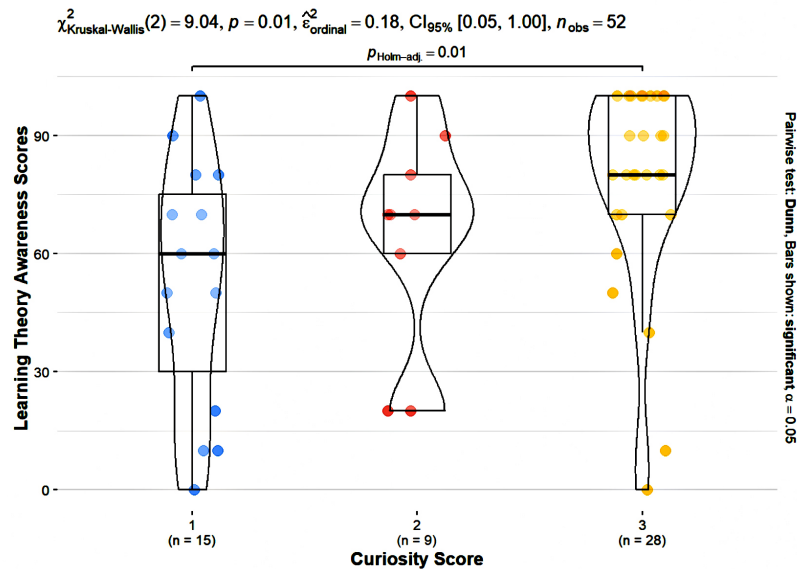


Figure 1: Group differences between the level of curiosity (1 = Not Curious, 2 = Somewhat Curious, 3 = Curious) and learning theory awareness (<10% = no awareness, 100% = Full awareness).

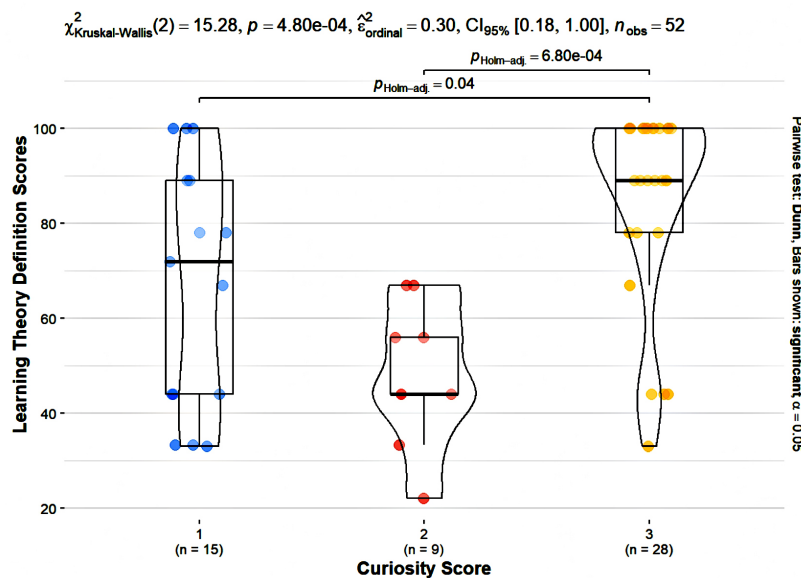


Figure 2: Group differences between the level of curiosity (1 = Not Curious, 2 = Somewhat Curious, 3 = Curious) and learning theory definition scores.

This approach further examined the effect of the second independent variable, training method reasoning, on the three dependent variables above, using the same statistical test approach. This process enabled diverse free-text responses to be categorized into meaningful motivational groups (always used these methods, improving horse performance, and improving horse welfare) suitable for subsequent statistical analyses exploring category versus learning theory outcomes.

The three learning theory outcome measures (awareness, definition knowledge, and scenario application) were analyzed as separate outcomes because they represented distinct dimensions of learning theory engagement. Consequently, no experiment-wise multiple-comparison correction was applied across these analyses.

The present study assessed curiosity using behavioral diversity in reported training method selection. While exploratory, this proxy measure was intended to reflect engagement with multiple training approaches and openness to varied sources of information.

3. Results

A total of 70 survey responses were collected, including 62 female and 8 male participants. The largest age group was 26–35 years ($n = 18$) (Figure 1). Participants with invalid curiosity or reasoning scores coded as 0 were excluded from inferential analyses (i.e., no methods chosen for curiosity or no reason provided for training methods). Consequently, only participants with valid scores ranging from 1 to 3 for both variables were included in subsequent statistical testing ($n = 52$). Based on a sample of 52 individuals from an estimated

population of 4.3 million, the survey produced a margin of error of $\pm 13.59\%$, calculated using the standard error of the proportion with a finite population correction.

Eighty-one percent of participants ($n = 42$) reported working with or riding horses for more than 10 years and engaging with horses daily. The majority of respondents identified as amateurs (80%), defined as not earning financial income from riding or training horses, while 20% identified as semi-professional or professional riders/trainers earning at least 50% of their income through equine-related work.

Within the participant group, 40% ($n = 28$) stated that they had no equine- or animal-specific qualifications, 14% ($n = 10$) had equine- or veterinary-related bachelor's degrees, while the other 46% reported various other levels of qualifications or professional affiliations (e.g., PhD, master's degrees, vocational qualifications, trade qualifications including farriery, complementary therapy qualifications, and coaching qualifications, including British Horse Society (BHS) and Pony Club).

3.1. Relationship Between Curiosity, Training Method Choice Reasoning, and Learning Theory Outcomes

Normality assumptions were assessed using Shapiro-Wilk tests. Where assumptions of normality were violated, Kruskal-Wallis tests were used in place of one-way ANOVA.

3.1.1. Learning Theory Awareness

Learning theory awareness (LTA) results were not normally distributed. A Kruskal-Wallis test revealed a statistically significant difference among the groups ($H(2, N = 52) = 9.04, P = 0.01$). The effect size was moderate ($\eta^2 = 0.18$, CI 95% [0.05, 0.31]). Post hoc pairwise comparisons using Dunn's test with Holm-adjusted P -values indicated a significant difference between curiosity groups and learning theory awareness ratings ($Z = -2.77, P = 0.01$); (Figure 1).

3.1.2. Learning Theory Definition Scores (LTD)

Learning theory definition (LTD) scores were not normally distributed. A Kruskal-Wallis test revealed a significant difference among the three curiosity groups in LTD scores ($H(2, N = 52) = 15.28, P = 0.01$). Post hoc pairwise comparisons using the Holm adjustment were significant (adjusted $P = 0.04$). The ordinal effect size was 4.80×10^{-4} , 95% CI [0.18]; (Figure 2).

3.1.2.1. Learning Theory Scenario Scores (LTS)

Scenario-based learning theory scores met the assumptions of normality and were analyzed using one-way ANOVA. Welch's one-way ANOVA indicated a statistically significant difference in LTS among curiosity groups ($F_{\text{Welch}}(2, 27.27) = 22.21, P = 1.89 \times 10^{-6}$, partial $\eta^2 = 0.58$, 95% CI [0.36]), based on 52 observations. Tukey post hoc testing remained significant after correction ($P_{\text{adj}} = 0.004$); (Figure 3).

3.2. Training Method Reasoning

Thirty-two percent of participants chose methods based on "always having used these methods," 36% to improve horse performance, and 32% to improve horse welfare (Figure 4). No significant effect of training method on reasoning on LT awareness, LTD, or LTS scores was demonstrated following Kruskal-Wallis testing.

4. Discussion

This study aimed to investigate the influence of equine stakeholder curiosity-driven behavior on learning theory knowledge, application capabilities, and the reasoning behind training method choice. While curiosity showed consistent significant differences across all learning theory outcome measures (i.e., as curiosity level increased, learning theory outcome measures increased), no significant effects of training method choice reasoning on learning theory awareness, definition scores, or scenario-based scores were identified.

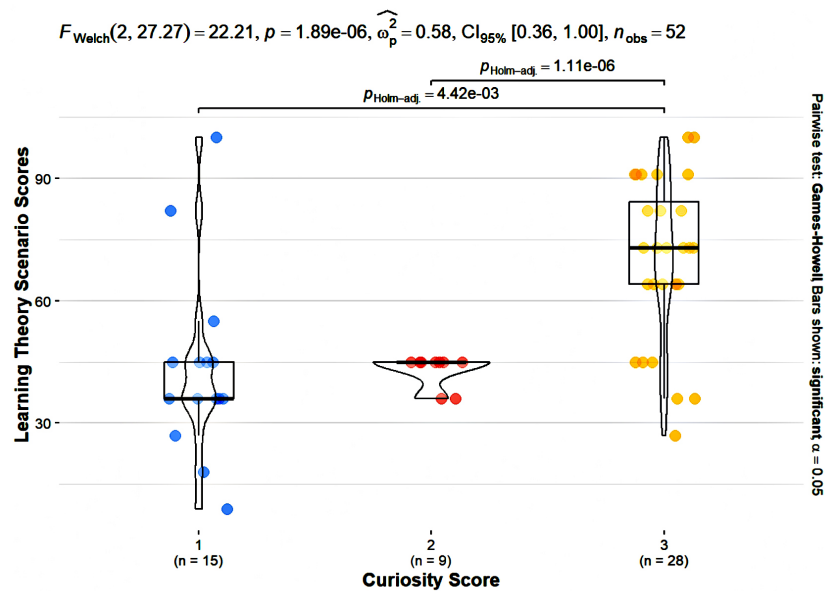
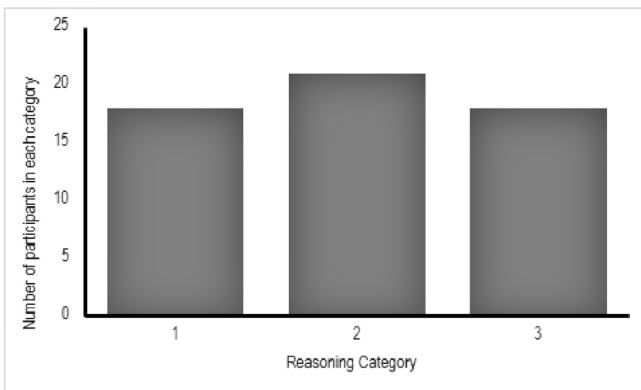
Some participants within the lower curiosity groups reported higher perceived awareness of learning theory compared to more curious participants. This perceived awareness could stem from various factors related to individual differences in practice, confidence, and self-assessment. Influential factors may include the Dunning-Kruger effect, the discrepancy between confidence in one's knowledge and actual understanding, and the accuracy of self-assessment [48]. The Dunning-Kruger effect could reflect overestimation of knowledge among less-curious individuals [48]. However, as this effect typically relates more to knowledge than awareness, further research may help clarify its role in self-assessment versus actual performance. These findings also raise questions about the reliability of self-assessment in subjective areas of knowledge.

Table 1: Definitions of reinforcement and punishment [19,51,52] were demonstrated in section 3 of the survey through multiple-choice options.

	Positive	Negative
Reinforcement – The action of providing consequences for a response that increases the likelihood that the behavior will be repeated.	The addition of an encouraging stimulus to increase the frequency of a behavior.	The removal of an aversive stimulus to increase the frequency of a behavior.
Punishment – The action of providing consequences for a response that reduces the likelihood that the behavior will be repeated.	The addition of an aversive stimulus to decrease the frequency of a behavior.	The removal of an encouraging stimulus to decrease the frequency of a behavior.

Table 2: Definitions of learning theory terminology, adapted from [32,37] and presented in Section 3 in multiple-choice options.

Terminology	Definition used in the survey
Habituation	Gradual decrease in the frequency and severity of a response following repeated sensory stimulus exposure (with no previous conditioned emotional response).
Shaping	The process of learning a new behavior through rewarding successive approximations that are close to the target behavior until the final behavior is achieved.
Systematic Desensitization	Practical methods of gradually decreasing the frequency and intensity of a response to an arousing stimulus following repeated exposure to the stimulus (with a previously conditioned emotional response).

**Figure 3:** Group differences between the level of curiosity (1 = Not Curious, 2 = Somewhat Curious, 3 = Curious) and learning theory scenario scores.**Figure 4:** Training method choice reasoning (1 = Always having used these methods, 2 = Improving horse performance, 3 = Improving horse welfare).

Higher curiosity levels were consistently associated with stronger learning theory awareness and application scores, reinforcing the potential importance of curiosity-driven engagement within equestrian education and welfare contexts [11,17,42,53]. These results underscore the importance of fostering curiosity within equine behavior, learning, training, and welfare management [5,20,43,44].

However, a key question remains as to the extent to which this measure of curiosity accurately reflects participants' real-world curiosity and engagement with training practices.

In this context, curiosity-driven behavior may be understood as an individual's motivation to seek, engage with, and apply knowledge relating to learning theory and training approaches. How behavioral diversity is directed and built has the potential to directly impact the identification, application, and critical evaluation of training and behavior methodologies, which could directly support and continue the promotion of equine welfare and well-being. Although this concept is impactful, measuring this construct solely through recognition of terminology raises concerns regarding both the construct and the ecological validity of these findings.

Furthermore, whether familiarity with learning theory terminology necessarily corresponds to practical competence requires evaluation. Stakeholders may be applying welfare-oriented training methods effectively in real-world contexts without accurately identifying or labeling these approaches using formal terminology. This could result in an underestimation of stakeholders' practical knowledge. Conversely, some individuals may demonstrate familiarity with terminology without effectively applying these principles in practice, thereby overestimating their competence, supporting earlier observations regarding the Dunning-Kruger effect [48].

The above discrepancies have the potential to skew the interpretation of the findings and limit the extent to which results can be generalized to the wider equestrian community.

Future research could incorporate scenario-based or case-based methodologies to assess these components. This could involve participants describing or justifying how they would approach specific training or behavioral situations. This approach could allow for a more accurate assessment of applied knowledge, independent of reliance on terminology alone.

Nevertheless, this raises questions regarding the role of learning theory terminology within the industry. If sector progress is to occur in education and professional development, there may be value in encouraging greater recognition and use of learning theory terminology and its practical application. Developing shared terminology and educational practices could enhance communication between practitioners, reduce ambiguity in the discussion of training methods, and support the dissemination of evidence-based, welfare-oriented practices. Aligning both theoretical understanding and practical application may be vital to the promotion of consistent and effective approaches to training and behavior within the field.

Consequently, strategies that encourage curiosity, critical evaluation of existing practices, and engagement with learning theory may be important for promoting behavioral change within the equestrian industry. This is particularly relevant for stakeholders who perceive their current approaches as impactful, whether judged by training, behavior, or competition outcomes. As such, these perceptions may reduce motivation to seek alternative methods. Encouraging exploration of alternative information and approaches could enhance both understanding of equine learning theory and the motivation to adopt welfare-oriented training practices across the industry [6,19,20,29,34,43,46,48,49,54,55].

When discussing motivational priorities, if owners see the outcome they desire through their chosen methods, they may be less likely to identify whether changes are needed [27,47]. Motivation-driven equestrian research has highlighted an imbalance between horse needs and human needs when selecting practices [47]. This imbalance may result in a human-centric justification for method selection, potentially due to feelings of familiarity and safety based on past experiences. Familiar methods may feel safer or more effective based on visible performance outcomes, potentially discouraging exploration of alternative, welfare-focused approaches [6,19,20,29,34,43,48,49,54]. While discussing curiosity, motivational priorities and motivational type can also play a role in how stakeholders build their knowledge and select methods for training and supporting their horses.

Variation observed between reasoning categories still warrants further exploration in larger studies investigating how stakeholder motivations influence engagement with learning theory concepts and welfare-oriented practices. Although no significant differences were identified between reasoning groups, descriptive variation observed between categories may indicate differing priorities in training approach selection. Participants selecting performance-oriented reasoning may place greater emphasis on outcome-focused approaches rather than on a broader understanding of equine learning processes [54]. However, these observations were not statistically significant and should therefore be interpreted cautiously [25,27,32]. Such an approach may reflect a preference for quick fixes over

holistic comprehension of equine learning processes and behavioral support during day-to-day activities and high-level performance roles [6,19,20,29,34,43,48,49,54].

Participants with higher curiosity levels were more likely to report welfare-oriented reasoning for training method selection. Although welfare-focused reasoning was not significantly associated with higher learning theory outcome scores in the present study, this pattern may suggest that curiosity-driven exploration of training approaches could encourage broader consideration of equine welfare and behavioral management [5,19,27,44,47,48]. This group may be more invested in achieving long-term outcomes, incorporating both the horse's physical and psychological needs. Their approach could foster further welfare-focused curiosity-driven behavior [20,27,31,41,56].

Respondents selecting traditional or habitual reasoning categories did not significantly differ in scenario-based assessment scores from other groups. Nevertheless, the continued reliance on tradition-based approaches within equestrianism raises important questions regarding how stakeholders engage with reflective practice, evidence-based education, and learning theory development across the industry. As an industry, equestrianism remains steeped in tradition [22,27,33,34,49,54], often relying on anecdotal evidence to justify the continued use of certain methods. In a curiosity-driven model, if a method meets visible performance expectations, it may not inspire further learning or critical reflection. Shifting the industry's focus from performance outcomes to holistic welfare-based approaches may encourage deeper exploration of behavior, influencing training methods and enhancing equine welfare [5,20,22,34,38,45]. Educational experiences that inspire curiosity and focus on equine well-being, including learning theory, could significantly improve both training outcomes and the human-horse relationship.

No significant associations were identified between training method choice reasoning and learning theory awareness, definition scores, or scenario-based application scores. Not providing a reason for training method selection or for improving performance may not significantly influence the ability to apply learning theory to practice, positively or negatively. These findings may reflect the exploratory nature of the study and the relatively small sample size. Studies using larger and more representative samples may help clarify whether meaningful relationships exist between stakeholder motivations and learning theory engagement. Future research could explore contributing factors, such as age, experience, and geographic location, to inform targeted educational strategies for younger students, horse riders, and other demographic groups, with methods that match preferred information-seeking behaviors.

Participants with higher learning theory scores may represent a demographic with broader skills and practices, encouraging the horse's individuality and agency. These findings have substantial implications for current equestrian education practices. The industry may benefit from emphasizing learning theory through theoretical and practical workshops, certificate programs, coaching education, and CPD opportunities for experienced practitioners to bridge knowledge gaps. These findings align with earlier work [23,25], which found low learning

theory scores among coaches and owners before educational intervention. Previous findings [25] also noted differences between professionals and amateurs, with professionals scoring higher, suggesting benefits from formal education and highlighting target demographics where knowledge and curiosity disparities may exist [5,7,9,21,40,44,51,57,58]. Respondents using a wider variety of training methods often chose those methods to improve equine welfare. Emphasizing the connection between welfare and performance may cultivate curiosity and openness to adopting evidence-based, holistic methods grounded in learning theory as well as welfare and well-being [22,33]. This shift could ultimately enhance the welfare of the horse and the trainer, as well as increase the quality of the horse's performance, aligning the interests of various stakeholders in the equestrian industry.

Within the potential introduction of new educational and marketing strategies, the role of effective teachers cannot be overstated. Educators who engage learners across all levels, eliminate personal biases, and adapt to individual needs can foster curiosity and ethical training practices [22,33,44,47,50,52,59,60]. Such efforts could strengthen the human-horse relationship and promote a positive training culture [20,28–30,34,43,45,56]. Educational programs for both emerging professionals and horse owners could explore how direct knowledge interventions affect curiosity and understanding [5,25,32,44,50]. Echoing recent practitioner workshops on learning education [34,49], these findings support the ongoing development of pedagogical approaches focusing on training methodology, learning theory, and the human-horse relationship.

Future research could explore the underlying causes of disparities in learning theory understanding and identify effective ways to disseminate this knowledge across equestrian sectors. Longitudinal studies evaluating learning theory-based interventions, including instructor influence, could offer valuable insights into how educational formats impact both welfare and performance outcomes [24,25,35,50]. In addition, exploring the influence of mentorship on practitioner knowledge and application skills could prove highly beneficial as another form of pedagogical support for owners seeking more directed support [13,16,21,47,60–62]. This suggests that encouraging broader engagement with learning theory, training approaches, and equine behavior knowledge may support the development of welfare-oriented training decisions and practical learning outcomes [13,16,20,21,27,34,43,51,58,61]. Applying this in practice could involve moving beyond a single method as a central source of knowledge and industry focus toward examining how education programs, practitioner discussions, and coach education formats are built to support owner and practitioner development [5,20,25,34,43–45,48–50].

This focus could support the application of learning theory and welfare-driven training methods while enabling owners to make informed decisions by exploring diverse approaches. Encouraging a critical, curiosity-led perspective for all welfare- and well-being-driven support, drawing from both equestrian and non-equestrian contexts, could broaden understanding and build confidence in supporting decision-making and its application while prioritizing equine welfare.

4.1. Limitations

A key limitation of this study is shown in the relatively small sample size of surveyed participants ($n = 52$), which may restrict the breadth and generalizability of the findings to the wider industry and population. While the data provided valuable insights into how stakeholder curiosity correlates with training method approach, reasoning, and awareness of learning theory, a limited participant pool may not fully capture the diversity of experiences, disciplines, and educational backgrounds present across the broader equestrian community. The $\pm 13.59\%$ (95% CI) margin of error highlights the impact of the sample size. This limitation could lead to an overrepresentation of certain participants and industry perspectives, in conjunction with the underrepresentation of others. Although the results could be explored in discussions, outcomes should be taken with caution when relaying to the wider industry. To strengthen future research, expanding the sample size through targeted outreach, such as collaborating with national equestrian organizations, attending industry events for participant recruitment, and using online platforms frequented by trainers, could enhance representation and reduce the margin of error, including the use of professional platforms (e.g., LinkedIn). Additionally, incorporating stratified sampling to ensure balanced inclusion across training disciplines, experience levels, and educational exposure could provide more nuanced knowledge and a more critical evaluation of how curiosity influences equine training practices and the application of learning theory. For a study exploring this area in its infancy, the results act as a secondary pilot study, after which further developments could occur. Although no significant differences were identified between training method reasoning groups and learning theory outcome measures, this is a topic for further exploration within a larger sample size.

A second limitation concerns participants who selected Equitation Science as the only method used in practice. This choice may account for higher learning theory awareness ratings and elevated scores in the "Always Have Done" group. As Equitation Science is an approach focused on learning theory, does the use of this approach demonstrate curiosity-driven behavior as it discusses this evidence? This question raises the opportunity for critical discussion on the value of engaging with a diverse range of methodologies (equine and non-equine), particularly those informed by learning theory, as well as those that are not, rather than relying on a single framework, allowing owners to make informed decisions when identifying their horse's needs. Supporting diversity in method selection could further enhance educational outcomes and more effectively address individual equine and owner support needs while also fostering critical thinking in evaluating horse care and management practices across industry sectors.

The way curiosity was measured in this study provides one framework for the equine industry to assess knowledge and understanding of equestrian training through different approaches, the factors that may influence this knowledge, and the steps that may be taken to achieve a higher standard of knowledge and its application in equine welfare. This design focused on curiosity within training method choice; however, curiosity as a human behavior is dynamic and is impacted by many factors, which should be considered when

generalizing the results and planning future equestrian research. Future studies could incorporate previously designed methodologies to explore curiosity in conjunction with a directed examination of the Dunning–Kruger effect to explore curiosity as a driver of behavioral change in equestrianism.

5. Conclusion

Particularly in the competitive sporting field, the focus of the industry is geared toward the improvement of equine performance. Higher curiosity levels were consistently associated with greater learning theory awareness, definition knowledge, and scenario-based application scores. Participants with higher curiosity levels were also more likely to report selecting training methods for welfare-oriented reasons. These findings suggest that encouraging curiosity, critical thinking, and engagement with diverse training approaches may support greater uptake of evidence-informed and welfare-oriented practices within the equestrian industry.

Although no significant differences were identified between training method reasoning categories and learning theory outcome measures, the observed descriptive patterns warrant further exploration in larger studies. Encouraging open-minded engagement with learning theory and reflective evaluation of training practices may provide valuable opportunities to improve both equine welfare and stakeholder education across the industry.

Supplementary Materials

The **Supplementary Materials** include the survey questionnaire, comprising the demographic questions, learning theory awareness assessment, learning theory definition questions, scenario-based application questions, and training method selection items used in this study.

Authors' Contributions

L.H.: Conceptualization, Methodology, Investigation, Data curation, Formal analysis, Writing – original draft. M.F.: Formal analysis, Writing – review & editing. C.K.: Writing – review & editing. L.C.: Conceptualization, Methodology, Formal analysis, Writing – review & editing, Supervision.

Data Availability

The data supporting the findings of this study are available upon request from the corresponding author.

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Conflicts of Interest

The authors declare that there are no conflicts of interest.

Ethical Approval

This study received ethical approval from the Sparsholt Research Ethics Group [UCS0421].

Consent to Participate

Participant consent was obtained through submission of the survey and answering yes to providing their consent for data to be used at the beginning of the survey.

Declaration of Generative AI and AI-Assisted Technologies

The authors confirm that no Generative AI or AI-assisted technologies were used in the writing, editing, or preparation of this manuscript. The entire content was authored solely by the individuals listed.

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