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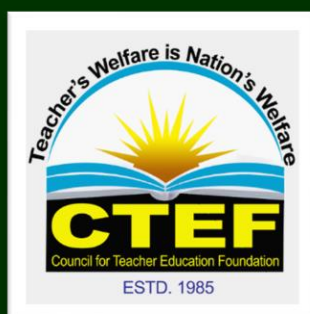
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A Social Learning Theory-Based Intervention to Promote Sustainable Waste Management Behaviour Among Students

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Abstract

India faces numerous challenges related to waste management, including inadequate disposal systems, a lack of awareness and willingness to segregate waste, and insufficient resources. Students are the future of society, and they learn fast. If we inculcate the SWM behaviour in the early ages of their lives, it will help society. This study examines whether SLT relationships hold true for children's environmental behaviour development, specifically in waste management education among rural students. This study evaluates the effectiveness of a Social Learning Theory (SLT)- based intervention designed to enhance sustainable waste management practices among middle-stage students. Using a pre-experimental pre-test-post-test design, the study assessed 339 students (aged 10-15 years) from three rural schools in Halol, Gujarat. Students were evaluated on three SLT domains: cognitive understanding, outcome expectancies, and behavioural performance. A comprehensive, approximately 30-hour intervention was conducted. The findings showed a significant improvement across all three domains: cognitive understanding increased the most by 123.5% with $p<0.001$, Cohen's $d = 3.24$, outcome expectancies improved by 21.7% with $p<0.001$, Cohen's $d =1.92$, and behavioural performance showed enhancement by 67.5% with a large effect size of 0.89 after intervention. These findings suggest that children's environmental learning may follow independent developmental pathways rather than the sequential cognitive-affective-behavioural progression proposed by SLT. This has significant implications for environmental education theory and practice, suggesting that multi-component interventions targeting each domain separately may be more appropriate for children than adult-oriented sequential approaches. The intervention utilized 12 digital educational modules delivered through Hindi-language videos, visual demonstrations, and interactive communication strategies, demonstrating the potential of technology-mediated environmental education in resource-constrained rural settings.

Keywords: Waste management, social learning theory, rural schools, intervention, behaviour change, environmental education, digital learning, visual communication.

Introduction

Effective waste management is pivotal for promoting environmental sustainability and fostering responsible behaviour. Preschool is an important phase of life when behaviours are shaped, habits are formed, and basic behaviours are acquired **(Kotler et al., 2012).** However, rural schools often face inadequate waste disposal systems, a lack of awareness, limited resources and poor practices, contributing to environmental degradation. Despite initiatives promoting waste management education, the behavioural impact on students remains limited, as many programs focus only on theoretical knowledge without promoting practical behavioural change.

In rural India, where awareness about waste management is low, interventions must incorporate behavioural theories to drive long-term impact. Social Learning Theory (SLT), introduced by **Albert Bandura (1977),** posits that individuals learn behaviours through observation, imitation, and reinforcement. **Bandura (1986)** explained the essential principles of social learning theory and modelling with concepts. By modelling proper waste management practices, providing feedback, and offering hands-on experiences, students are more likely to adopt sustainable behaviours. SLT also emphasises self-efficacy, where individuals gain confidence in their ability to perform specific behaviours through repeated practice and positive reinforcement. Social learning theory argues that human behaviours are shaped by cognitive, behavioural, and environmental interactions **(Ergun, 2002; Ersan, 2016).**

In the contemporary educational sector, digital innovations and media-based communication strategies have emerged as powerful tools for environmental education. The integration of visual learning materials, digital content, and multimedia resources can significantly enhance knowledge retention and behavioral change, particularly among young students.

Theoretical Framework: Social Learning Theory (SLT)

SLT offers a comprehensive framework for understanding how individuals acquire and maintain behaviours through social interaction. The intervention program applied three core SLT principles:

1. **Observational Learning:** Students learned waste management practices by watching teachers model proper behaviour, including waste segregation, recycling, and composting.

2. **Reinforcement:** Teachers provided positive feedback and correction during practical sessions, reinforcing correct practices and motivating students.

3. **Self-Efficacy and Practice:** Students participated in hands-on waste management activities, such as waste segregation, composting, and recycling. This enhanced their confidence and ability to perform sustainable practices.

Applying SLT principles, the intervention aimed to promote long-term behavioural change among students, equipping them with the skills and motivation to adopt responsible waste management practices.

Research Problem

Waste Management assessment in rural schools exhibited limited cognitive understanding, low outcome expectancies, and poor behavioural performance. This highlighted the need for targeted intervention programs through digital educational modules and visual communication strategies within the Social Learning Theory framework to maximise intervention effectiveness in rural Gujarat schools.

Research Gap

While previous studies have applied the KAP (Knowledge, Attitude, Practice) model or Social Learning Theory (SLT) to environmental education, most assume a linear and interdependent relationship among constructs, where knowledge enhances attitudes, and attitudes drive behaviour. However, this assumption is largely derived from adult learning contexts, and there is limited empirical evidence on whether these relationships hold for school-aged children, particularly those studying in rural, resource-constrained environments. Existing research rarely examines whether SLT constructs—cognitive understanding, outcome expectancies, and behavioural performance—develop simultaneously or influence one another when applied to solid waste management learning in children. Moreover, contextual factors such as school infrastructure, peer influence, teacher modelling, family practices, and socio-cultural norms may disrupt these theoretical relationships, yet these influences remain underexplored.

This study addresses this gap by implementing an SLT-based intervention and systematically testing the relationships among SLT constructs after the intervention. The findings reveal that although students show significant improvements in all three domains, these constructs do **not** correlate or predict one another in the immediate post-intervention period. This provides new theoretical insight into how children learn environmental behaviours and challenges the linear progression commonly assumed in SLT and KAP-based environmental education models.

Research Objectives

The primary objective of this study is to evaluate the effectiveness of an SLT-based intervention program in enhancing waste management behaviour among students in three rural schools in Halol, Gujarat.

- To develop need-based SLT-driven intervention for rural schools, middle stage (6th- 8th) grade students.

- To evaluate the fundamental assumption that cognitive understanding, outcome expectancies, and behavioural performance follow predictable relationships in middle stage students' environmental learning.

- To assess the influence of independent variables (gender, age, and grade) on the effectiveness of the SLT-based intervention.

Hypotheses

H1: SLT-based intervention program will significantly improve students' cognitive understanding, outcome expectancies, and behavioural performance related to waste management.

H2: A significant positive relationship exists between students' cognitive understanding, outcome expectancies, and behavioural performance after the SLT-based intervention program.

H3: Post-intervention cognitive understanding significantly predicts students' outcome expectancies, and both cognitive understanding and outcome expectancies significantly predict behavioural performance related to waste management through the Structural Equation Model (SEM).

Methodology

This study used a pre-experimental one-group pretest–posttest design to evaluate the effectiveness of a Social Learning Theory (SLT)-based intervention on students' cognitive understanding, outcome expectancies, and behavioural performance regarding solid waste management. All participating students were assessed using a structured questionnaire before and after the intervention to measure changes across the three SLT domains. Three rural schools from Halol Taluka, Gujarat, were selected using purposive sampling, based on accessibility and school willingness to participate. Students from Grades 6, 7, and 8 within each school were selected using a systematic random sampling technique. Specifically, every third student on the class roster was selected, yielding an initial sample of 384 students.

Structured questionnaires were distributed to all 384 selected students. Of these, 339 questionnaires were returned fully completed, and only those were considered for analysis.

The **pre-test** was conducted in **January 2024** to assess the baseline levels of students' knowledge, attitudes, and practices related to solid waste management. Based on these results, a **customised intervention program** was designed and implemented. The **post-test** was administered in **September 2024,** following the completion of the 30-hour intervention.

A structured questionnaire based on the SLT framework was developed for data collection. The tool comprised three key sections:

- **Cognitive Understanding:** This section included 85 items with both positive and negative statements. Each item was scored dichotomously; correct responses were scored 1, while incorrect and "I do not know" responses were scored 0.

- **Outcome Expectancies:** This domain included 25 items, measured on a 3-point Likert scale: agree, neutral, and disagree and ascribed scores were 3,2,1, respectively

- **Behavioural Performance:** This section included 18 items assessing the frequency of sustainable behaviours using a 5-point scale; good practice scored 5, and poor practice scored 1.

Reliability

To ensure internal consistency, Cronbach's alpha was computed for the overall instrument and the three SLT domains. The reliability coefficient for the complete tool was found to be $\alpha = 0.88$, indicating high reliability.

Data Collection and Analysis

Quantitative data collected through the structured questionnaire were analysed using IBM SPSS Statistics (Version 20) and Jamovi (Version 2.6.44), with the SEMJ module for structural equation modelling. Data were analysed using IBM SPSS Statistics (Version 20) and Jamovi (with the SEMLj module). Descriptive statistics were used to summarise demographic and baseline variables. The Paired-t test and Wilcoxon signed-rank test assessed

pre–post changes in students. Pearson's correlation examined relationships among post-test scores across the SLT domain. Finally, structural equation modelling (SEM) tested the hypothesised SLT path model. Model fit was evaluated using indices such as CFI, RMSEA, SRMR, and χ^2; standardised path coefficients and significance values were reported. The analysis followed a multi-step approach to address the research objectives.

Findings and Discussions

Development of the SLT-based intervention program

The intervention program was designed after the pre-test using Bandura's Social Learning Theory (SLT). SLT emphasises that learning occurs through observation, imitation, modelling, and reinforcement in a social context **(Bandura, 1965).** A total of 30 hours of the intervention program was delivered over 1.5 months. The intervention aimed to enhance students' cognitive understanding, outcome expectancies, and behavioural performance related to solid waste management (SWM) by using education techniques rooted in the SLT domains of attention, retention, reproduction, and motivation. Twelve educational modules were developed and delivered in Hindi for rural students to better understand. The duration of each module was kept at 12-13 minutes with high-quality, real-time videos. Modules corresponded to specific waste categories and SWM practices, incorporating theoretical explanations and hands-on demonstrations. Group-based tasks such as waste audits, composting activities, and poster-making supported behaviour modelling and social reinforcement. Prizes were distributed to the winning team for each activity to boost the motivation. Each module and material was carefully aligned with the components of SLT: attention, retention, reproduction, and motivation, as shown in Figure 1.
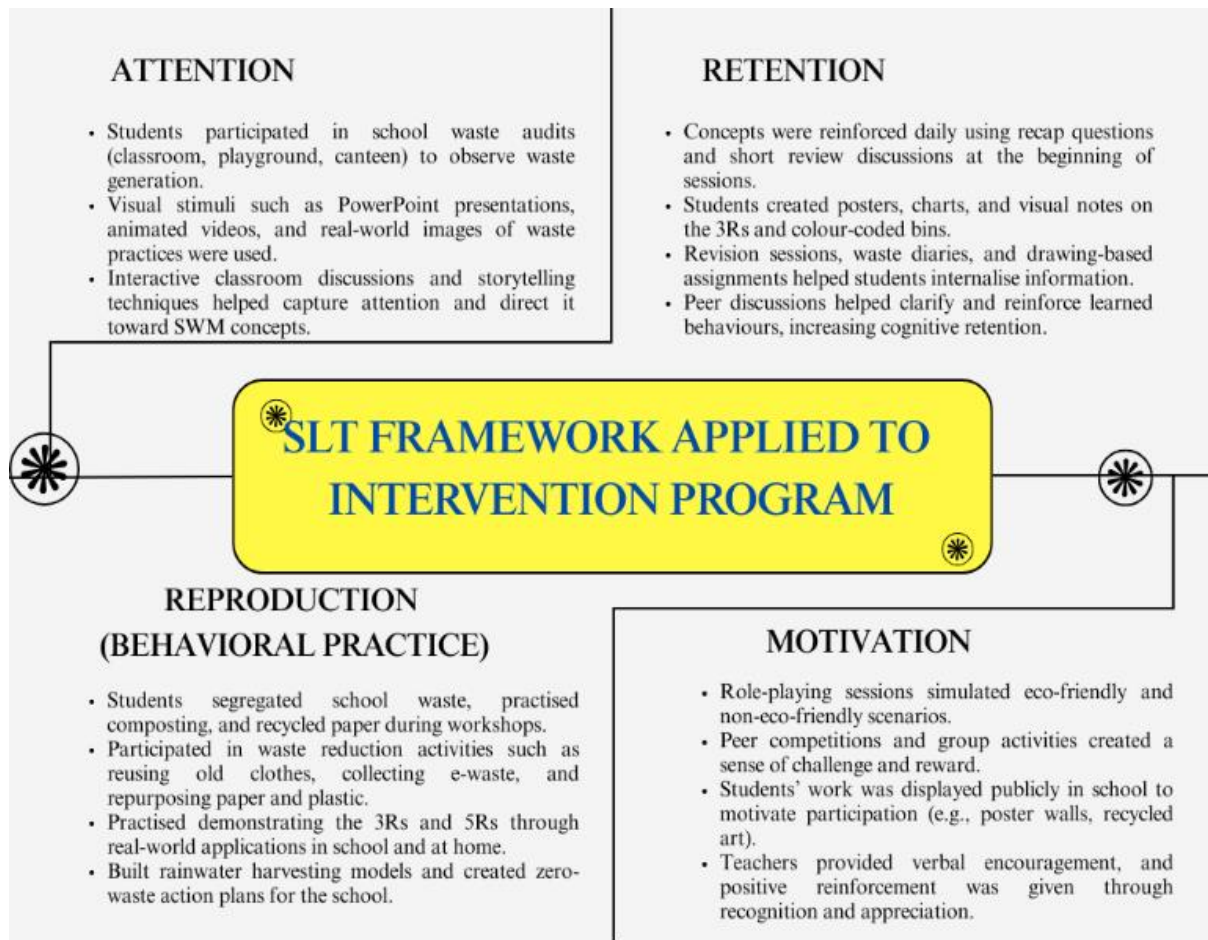
Figure 1 – SLT Framework

Background information on the students

The study included 339 students from three rural schools in grades 6th to 8th in Halol, Gujarat. As shown in **Table 1** and **Graph 1**, most students were aged 12-13 years (65.5 per cent), with a mean age of 12.33 years and an SD of 1.16. Males represented 63.7 per cent of the total students. The distribution across academic grades was relatively balanced, 36.6 per cent from 6th grade, 29.8 per cent from 7th, and 33.6 % from 8th grade.

Table 1: Frequency and Percentage distribution of the students according to their background information

Background Information of the students	Students (n=339)		
	f	***%***	Mean (SD)
Age (in years)			
10-11 years	73	21.5	12.33 (1.16)
12-13 years	222	65.5	
14-15 years	44	13	

Gender		
Male	216	63.7
Female	133	36.3
Grade		
6th Grade	124	36.6
7th Grade	101	29.8
8th Grade	114	33.6

Graph 1:
Percentage Distribution of Students (n=339)
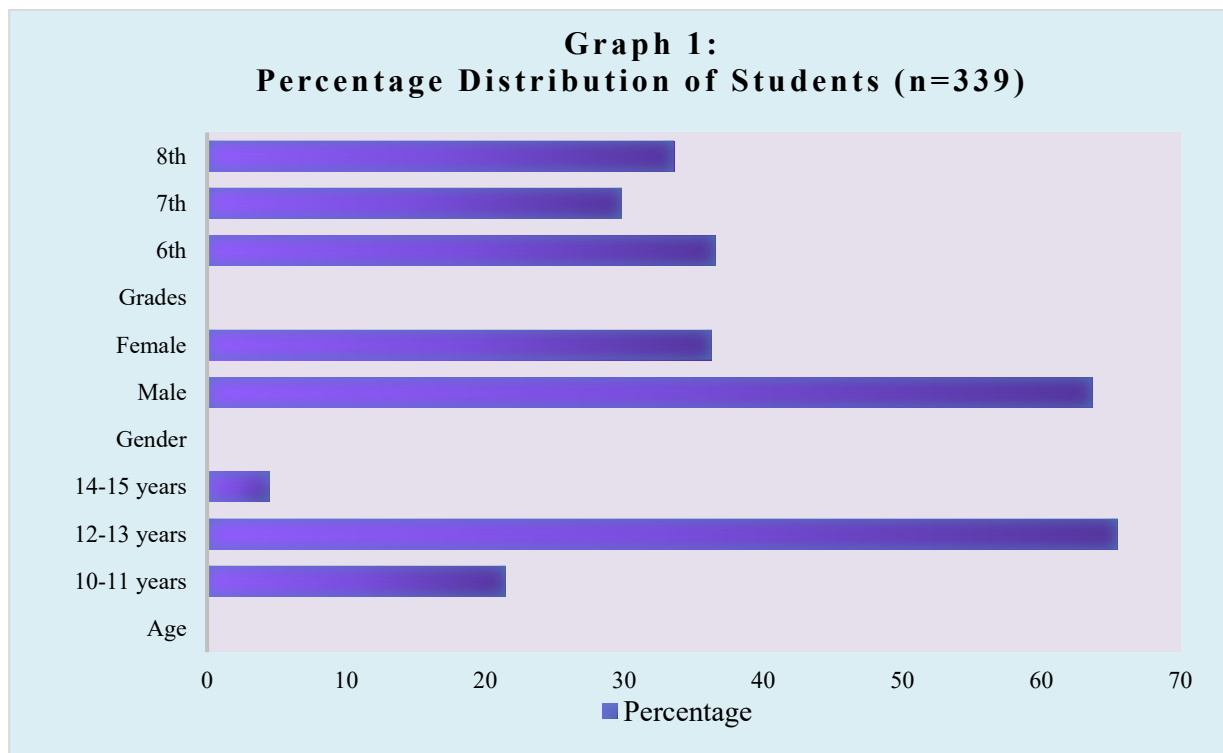
Effectiveness of the SLT-Based Intervention

The intervention resulted in substantial improvements across all three Social Learning Theory domains (Table 2). Cognitive Understanding scored more than doubled from pre-test (M= 26.70, SD = 8.05) to post-test (M= 59.68, SD = 6.78), with skewness and kurtosis lying between -1 and 1, showing normal distribution of the scores. Outcome Expectancies showed moderate improvement from pre-test (M=52.49, SD = 4.17) to post-test (M = 63.90, SD = 3.90) with a standard distribution curve, followed by the Behavioural Performance demonstrated the most substantial relative improvement, increasing from pre-test (M = 41.25, SD = 6.47) to post-test (M = 68.12, SD = 2.45) with highly skewed data in **Table 2.** Mean score comparison between pre-test and post-test of the SLT domain in **Figure 2.**

Table 2: Descriptive Statistics of SLT Domain Before and After the Intervention (n =339)

SLT Construct	Pre-test		Post-test		Change in per cent
	Mean (S.D.)	Skewness (Kurtosis)	Mean S.D.	Skewness Kurtosis	
Cognitive Understanding	26.70 (8.05)	0.11 (-0.18)	59.68 (6.78)	0.23 (-0.69)	123.5%
Outcome Expectancies	52.49 (4.17)	-0.09 (-0.48)	63.90 (3.90)	-0.56 (0.07)	21.7%
Behavioral Performance	41.25 (6.47)	3.53 (15.74)	68.12 (2.45)	2.67 (12.89)	67.5%
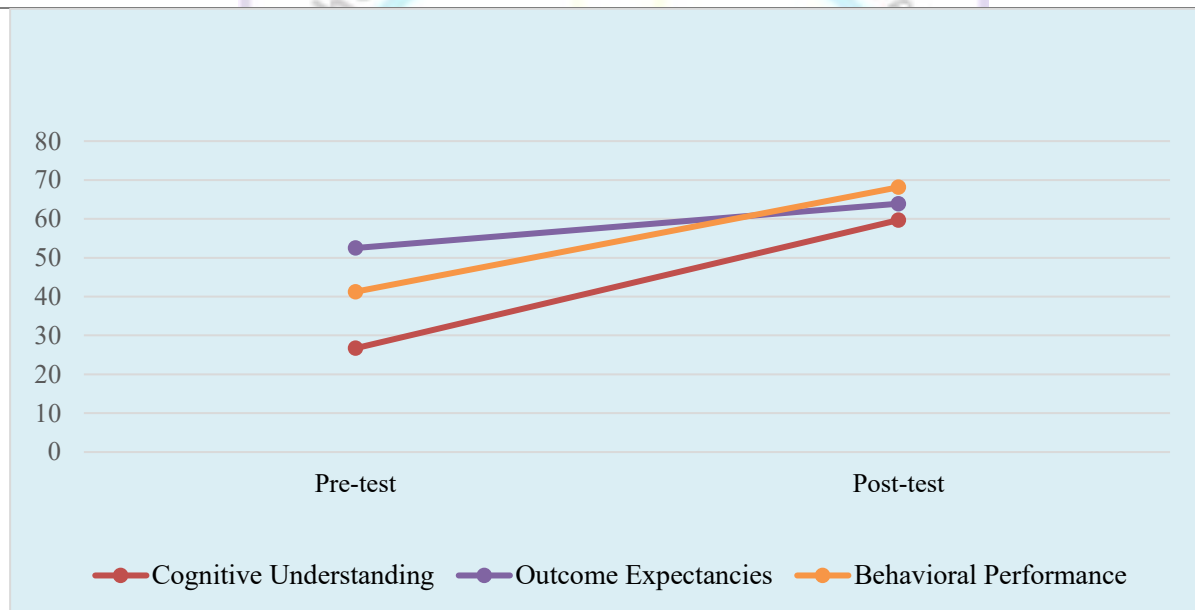
Figure 2: Pre-test and Post-test mean score comparison of SLT Domain

Testing of Research Hypotheses

H_{01}: SLT-based intervention program will not significantly improve students' cognitive understanding, outcome expectancies, and behavioural performance related to waste management.

Paired t-test applied for cognitive understanding and outcome expectancies, and the Wilcoxon signed rank test for behavioural performance. As shown in Table 3, the paired t-tests revealed statistically significant improvements in both cognitive understanding (t = -59.55, p < 0.001)

and outcome expectancies (t = -35.35, p < 0.001), with large effect sizes (Cohen's d = 3.23 and 1.92, respectively). Table 4 presents the result of the Wilcoxon signed-rank test for behavioural performance. The test revealed a statistically significant improvement (Z = -15.96, p < 0.001) with a considerable effect size (effect size r = 0.89). Hence, the null hypothesis is rejected. The SLT-based intervention program significantly positively impacted students' cognitive understanding, outcome expectancies, and behavioural performance related to solid waste management.

Table 3: Paired-Sample t-Test between pre- and post-test (n=339)

Domains	Mean (SD)	t-value	df	p-value	Cohen's d
Cognitive Understanding	-32.97 (10.19)	-59.55	338	0.00	3.24
Outcome Expectancies	-11.40 (5.94)	-35.35	338	0.00	1.92

Note. Negative mean differences indicate improvement from pre-test to post-test

Table 4: Wilcoxon Signed Rank Test to compare pre- and post-test (n=339)

Construct	Ranks	Mean Rank	Sum of Ranks	Z	p-value	Effect size
Behavioural Performance	Negative	12.50	37.50	-15.96	0.001	0.89
	Positive	170.91	57253.50			

H$_{02}$: There is no significant positive relationship between students' cognitive understanding, outcome expectancies, and behavioural performance after the SLT-based intervention program.

To test the H$_{O2}$, Pearson's correlation coefficients were calculated among the post-intervention scores of the three SLT domains. Table 5 shows that none of the Pearson correlations among the SLT domain after the intervention were statistically significant. The correlation between cognitive Understanding and Outcome Expectancies was negligible; a weak and non-significant relationship was found between behavioural performance and cognitive understanding and Outcome expectancies. Hence, the null hypothesis is accepted. Despite significant improvements, there were no significant relationships among the SLT domains. These findings directly challenge the sequential progression central to SLT theory when applied to students' environmental learning.

Table 5: Pearson Correlation Matrix Among SLT Domain of Post-Test (n=339)

Domains	Cognitive Understanding	Outcome Expectancies	Behavioural Performance
Cognitive Understanding	-	-	-
Outcome Expectancies	0.018	-	-
Behavioural Performance	0.074	0.032	-

Note.   All correlations are Pearson's r. None are statistically significant at p < .05.

H03: Cognitive understanding does not significantly predict students' outcome expectancies, and both cognitive understanding and outcome expectancies do not significantly predict behavioural performance through the Structural Equation Model (SEM).

To test HO3, structural equation modelling (SEM) was conducted in Jamovi. (SEM) Syntax was used. The relationship was entered as "Outcome Expectancies $\cong$ cognitive understanding", "Behavioural performance $\cong$ cognitive understanding + outcome expectancies". The structural equation model demonstrated excellent fit to the data: $X^{2(0)}$ = 6.02e-13, CFI = 1.000, RMSEA = 0.000, SRMR = 0.000. However, as shown in **Table 6**, none of the structural path coefficients reached statistical significance. The path analysis shows that the cognitive understanding of outcome expectancies was positive but negligible (β = 0.02, p = 0.74). Similarly, outcome expectancies did not significantly predict behavioural performance (β = 0.04, p = 0.54). The direct path from cognitive understanding to behavioural performance was negative and again non-significant (β = -0.08, p = 0.16). The findings revealed that the null hypothesis is accepted. Cognitive understanding did not significantly predict students' outcome expectancies, and neither cognitive understanding nor outcome expectancies significantly predicted behavioural performance. **Figure 3** shows path analysis of structural equation model of SLT domains. The findings show that students' environmental learning may follow independent developmental pathways rather than the integrated assumed by adult-centred theories.

Table 6: Standardized Path Coefficient and Significance Levels for the SLT-Based SEM Model (n=339)

Predictor → Outcome	β	SE	z	p	95% CI (L – U)
Cognitive Understanding → Outcome Expectancies	0.02	0.03	0.33	0.74	-0.05 to 0.07
Outcome Expectancies → Behavioural Performance	0.04	0.02	0.60	0.54	-0.03 – 0.05
Cognitive Understanding → Behavioural Performance	-0.08	0.01	-1.38	0.16	-0.04 to 0.01

Note. All coefficients are standardised. Model fit indices: $\chi^2(0) = 6.02e{-}13$, CFI = 1.000, RMSEA = 0.000, SRMR = 0.000.
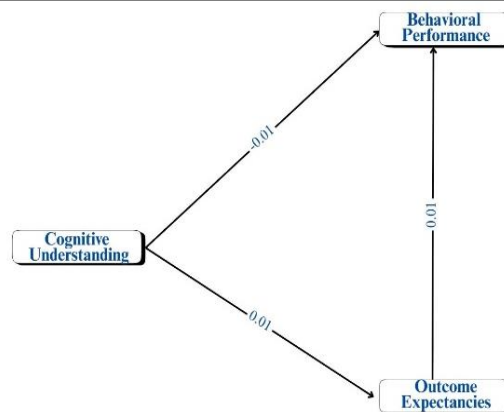

Figure 3: Path Analysis Structural Equation Model

Discussion

The findings of this study provide strong evidence for the effectiveness of the SLT-based intervention in improving students' abilities related to solid waste management. The significant improvements across all three domains, cognitive understanding, outcome expectancies, and behavioural performance, showed notable changes in the 30-hour intervention program over 1.5 months, successfully addressing its objectives. **(Alkan & Cavusoglu, 2024)** Their research consisted of 20 sessions over four months based on the stages defined in Social learning theory. They found a significant effect on social learning theory in the training process, which is effective in acquiring the desired behaviour through attention, retention, reproduction and motivation.

Despite the significant improvements in all three SLT domains, the lack of significant correlations and the non-significant path coefficients in the structural equation model present an intriguing paradox. Several factors might explain this disconnect. First, behaviour change

is a multifaceted process often requiring time to integrate new knowledge and attitudes into behavioural patterns. The immediate post-test timing may not have captured the delayed effects or the eventual integration of the SLT domains. Second, students aged 10-15 years are transitioning from concrete to abstract thinking (Piaget, 1977). They may develop environmental knowledge without necessarily integrating it into their personal beliefs or behaviour patterns. The study conducted by **Mkhonto and Mnguni (2021)** showed that a lack of motivation, the imbalance between didactic instructions, ineffective group work, and inadequate learner support impacted the effectiveness of the intervention program. Third, environmental attitudes may develop more slowly in students than cognitive understanding and behavioural compliance. Fourth, children's behaviour are heavily influenced by immediate social contexts (teachers, peers, family) rather than internal cognitive-affective processes. **Ersan (2016)** mentioned in their study that behaviour feedback (reinforcement) of adults and peers also affects the formation of behaviour**. (Houthur et al., 2019)** indicated a significant gap between knowledge and practice in their research, and the study concluded that despite sufficient knowledge regarding sanitation, poor attitudes hindered the conversion of the knowledge into practice. Weak correlations were found in their study.

The Role of Contextual Factors in Moderating Learning Outcomes

The disconnect between the significant improvements observed in the SLT domains and the absence of correlations among them can be better understood by examining the contextual factors that moderate environmental learning in rural schools. Numerous structural, social, and familial influences appear to mediate the extent to which cognitive gains translate into attitudes and behavioural performance.

First, the physical environment of the participating rural schools presented substantial infrastructural constraints. Even though students demonstrated improved cognitive understanding of waste segregation, recycling, and composting, their ability to convert this knowledge into consistent behaviour was limited by the lack of resources such as properly labelled waste bins, the absence of composting units, and inadequate storage spaces for segregated waste. These constraints restricted opportunities for students to practice sustainable behaviours, thereby weakening the expected relationships among SLT constructs.

Second, the social context within the school environment played a complex moderating role. While the intervention incorporated group activities, demonstrations, and teacher modelling, students' daily experiences remained heavily shaped by peer behaviour, teacher enforcement, and classroom norms. During this developmental stage, children are highly susceptible to peer influence, social reinforcement, and approval. Thus, although their outcome

expectancies improved, these expectations may not have translated into stable behavioural patterns without ongoing reinforcement. Similar findings have been reported by **Ahmad et al. (2015),** who observed no strong associations among knowledge, attitudes, and practices in environmental contexts, and by **Paghasian (2017),** who found that awareness did not necessarily influence waste disposal behaviour among students.

Third, family and community environments emerged as critical moderating variables. Many students returned home to settings where waste was not segregated, composting was uncommon, and sustainable practices were not prioritised due to cultural norms, traditional practices, or socio-economic constraints. When home routines contradict school-based learning, children often experience cognitive-behavioural dissonance, which can dilute the influence of school-based interventions. This inconsistency may explain why improvements in cognitive understanding and outcome expectancies did not strongly predict behavioural performance.

Together, these contextual factors suggest that behavioural change in children is not solely dependent on improved cognition or beliefs, but also on consistent reinforcement across school, home, and community environments. These findings highlight the importance of designing environmental education interventions that account for ecological and socio-cultural realities, rather than relying solely on theoretical assumptions derived from SLT or adult learning models.

Recommendations for Implementation and Practice

The findings suggest several targeted recommendations for enhancing environmental education interventions in rural school settings.

For School Administrators: Prioritise installation of labelled waste segregation bins across school premises, establish composting facilities, and create designated storage for recyclables. Form student-led "Green Teams" to monitor waste management activities and allocate dedicated budgets for environmental education infrastructure and recognition programs.

For Teachers: Receive training in SLT-based environmental pedagogy with emphasis on behavioural modelling and age-appropriate instruction. Consistently demonstrate proper waste segregation during classroom activities, integrate waste management concepts across subjects (mathematics, science, language), and implement structured reinforcement systems such as weekly recognition of exemplary practices. Facilitate reflection sessions where students discuss barriers to practising waste management and engage parents through simple home-based strategies.

For Curriculum Developers: Design programs that simultaneously target all SLT domains rather than assuming linear progression. Incorporate multi-sensory approaches, including visual learning (videos, demonstrations), kinesthetic activities (hands-on sorting, composting), and social learning (group projects). Include modules addressing real-world barriers and problem-solving skills, with family engagement components translated into local languages. Structure interventions as ongoing curriculum strands with periodic intensive modules and continuous reinforcement rather than short-term programs.

For Policy Makers: Mandate minimum waste management infrastructure standards for schools and provide targeted grants for rural environmental education development. Establish partnerships between schools and local waste management authorities. Integrate environmental education into official curriculum frameworks with dedicated instructional time and include mandatory environmental pedagogy in teacher professional development programs.

For Communities: Organize student-led waste management campaigns, establish community composting centres accessible to families, and engage local leaders and organizations in promoting environmental messages to create supportive cultural environments that reinforce school-based learning.

Conclusion

This study demonstrates that rejecting traditional hypotheses can lead to more important discoveries than confirming them. The evidence for independent developmental pathways in children's environmental learning represents a significant theoretical advance. This study demonstrated that a Social Learning Theory-based intervention can substantially enhance students' cognitive understanding, outcome expectancies, and behavioural practices related to sustainable waste management in rural schools. While significant improvements were observed in all three domains, the absence of strong inter-construct relationships suggests that behaviour change, especially among students, may require sustained reinforcement, time, and supportive environmental structures. The findings underscore the value of multi-faceted educational interventions grounded in behavioural theory, while also highlighting the need for longitudinal research to capture the evolving interplay between cognitive understanding, beliefs, and actions.

Limitations and Future Research Directions

When analysing the results of this research, it is important to recognise the study's limitations. The pre-experimental design's lack of a control group limits causal inferences regarding the intervention's effectiveness. Although the pre-post improvements were substantial and statistically significant, other factors might have influenced them. The immediate post-test timing may not have captured delayed effects or the relationships among the SLT domain over time. Future research would benefit from longitudinal designs that track changes in behaviours multiple times. Such designs would provide valuable insights into the temporal dynamics of behaviour change and the potential delayed emergence of significant relationships among the SLT domain.

Furthermore, children trying to satisfy their teachers may be susceptible to social desirability bias regarding self-reported behavioural measurements. Studies should consider incorporating objective behavioural measures or observational data to complement self-reports.

The study was carried out in a specific cultural and geographical context, rural schools in Halol, Gujarat. The generalizability of the findings to other contexts, such as urban schools or different cultural settings, remains to be established. Future research should explore the efficacy of similar interventions.

Funding Declaration

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Conflicts of Interest/Competing Interests:

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Human Ethics and Consent to Participate:

The study was approved by the Institutional Ethics Committee for Human Research (IECHR), Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, India (Approval No. IECHR/FCSc/P.hd/10/2023/03). Informed consent was obtained from all participants prior to their inclusion in the study. For participants under the age of 18 years, consent was obtained from their parents/guardians and school administrators. The study was conducted in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards

Clinical Trial Number: Not Applicable

Consent for Publication:

All participants (and parents/guardians for minors) provided informed consent for publication of anonymised data. No individual participant data, images, or videos are included in this publication that would require additional consent.

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