

Application of UDL Principles for the Life skill Development of CWMID through Thirukkural-A Tamil Verse

Meenakshi Sankaranarayanan¹, Sampathrani Kandasamy²

¹ Research Scholar, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore

² Professor, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore

HOW TO CITE:

Meenakshi Sankaranarayanan ,
Sampathrani Kandasamy (2026).
Application of UDL Principles for the
Life skill Development of CWMID
through Thirukkural-A Tamil Verse.
International Journal of Special
Education, 41(16s), 206-217

ABSTRACT:

Life skills play a crucial role in the overall development and social integration of children with mild intellectual disabilities. Developing these skills helps them to function independently and participate effectively in society. The present study aims to examine the efficacy of techno-based Universal Design for Learning (UDL) through Thirukkural in enhancing life skills among children with mild intellectual disabilities at the secondary level. The study adopted a quasi-experimental pre-test and post-test single group design. A total sample of 60 children with mild intellectual disabilities, aged between 11 and 14 years, was selected from four inclusive schools using stratified random sampling technique. The intervention programme was implemented using a techno-based application incorporating Thirukkural couplets, social stories and Universal Design for Learning principles, including multiple means of representation, engagement and expression. The training programme was conducted over a period of eight months. The life skills identified for the study include not hurting others, money management, truthfulness, courtesy, learning, love and affection, proper use of water, gratitude, time management and speaking pleasant words. A Life Skills Questionnaire consisting of 50 items was developed and used for data collection. The reliability of the tool was established using Cronbach's Alpha (0.874), indicating high internal consistency. The collected data were analysed using mean, standard deviation, gain score and paired sample t-test. The results revealed a significant improvement in the post-test scores compared to the pre-test scores, indicating the effectiveness of the techno-based UDL intervention. The findings of the study demonstrate that integrating Thirukkural-based value education with technology and UDL principles can effectively enhance life skills among children with mild intellectual disabilities. The study concludes that techno-based Universal Design for Learning strategies can be successfully implemented in inclusive educational settings to promote life skill development, social behaviour and independent functioning among children with special needs.

COPYRIGHT STATEMENT:

Copyright: © 2026 Authors.
Open access publication under the
terms and conditions
of the Creative Commons Attribution
(CC BY)
license (<http://creativecommons.org/licenses/by/4.0/>).

Keywords: Life Skills, Universal Design for Learning (UDL), Thirukkural, Mild Intellectual Disability, Inclusive Education, Techno-Based Learning, Social Stories

1. Introduction

Life skills are essential abilities that enable individuals to deal effectively with the demands and challenges of everyday life. These skills help individuals develop positive behaviour, effective communication, decision-making ability and social responsibility. For children with intellectual disabilities, life skills are particularly important because they assist them in achieving independence, improving social interactions and participating meaningfully in society (Bouck, 2010). Children with mild intellectual disabilities often face difficulties in understanding social situations, managing emotions and performing everyday tasks. Therefore, it becomes necessary to adopt appropriate teaching strategies that can help them develop essential life skills in a systematic manner. Inclusive education emphasises providing equal learning opportunities for all children, including those with special needs. In this context, teaching life skills using innovative and learner-centred approaches becomes an important aspect of special education.

Universal Design for Learning (UDL) is an educational framework that provides flexible learning environments to accommodate the diverse needs of learners. UDL emphasises the use of multiple means of representation, multiple means of engagement and multiple means of action and expression. These principles allow teachers to present information in different ways so that learners with varying abilities can understand and participate effectively in the learning process. In the present study, the researcher integrated Thirukkural-based value education with techno-based Universal Design for Learning strategies to enhance life skills among children with mild intellectual disabilities.

Thirukkural, one of the greatest classical Tamil texts, contains universal moral values that guide individuals towards ethical living, social harmony and responsible behaviour (Nagarajan, 2005).

The couplets of Thirukkural provide meaningful lessons on kindness, truthfulness, gratitude, courtesy and many other life values that are relevant to everyday life. According to Anita and Subalalitha (2019), the discourse structure of Thirukkural offers rich pedagogical potential for teaching value-based content in educational settings. Furthermore, Dhanalakshmi and Krishnan (2025) argue that the life-ethics embedded in Thirukkural remain highly applicable to contemporary educational contexts, particularly for character and value formation. Oorkolil (2025) notes that the philosophical depth of Thirukkural transcends cultural boundaries, making it a universally relevant teaching resource. By combining Thirukkural-based social stories, activity-based learning, role play and technological tools, the present study attempts to create an engaging and inclusive learning environment for children with mild intellectual disabilities.

The purpose of the study is to examine whether techno-based Universal Design for Learning strategies can effectively enhance life skills among these children and help them develop positive behaviour patterns.

Research Objectives

- To identify the level of life skills among children with mild intellectual disabilities before the implementation of the intervention programme.
- To develop a techno-based Universal Design for Learning programme using Thirukkural-based social stories for enhancing life skills.
- To examine the effectiveness of the techno-based Universal Design for Learning intervention in improving life skills among children with mild intellectual disabilities.
- To compare the pre-test and post-test scores of life skills among children with mild intellectual disabilities.

- To analyse whether there is a significant improvement in life skills after the implementation of the techno-based intervention programme.
- To study the influence of selected variables such as age, gender, locality and educational qualification of parents on the development of life skills.

Hypotheses of the Study

1. There is no significant difference between the pre-test and post-test scores of life skills among children with mild intellectual disabilities.
2. There is no significant difference in life skills between boys and girls with mild intellectual disabilities.
3. There is no significant difference in life skills between children belonging to rural and urban areas.
4. There is no significant difference in life skills among children based on the educational qualification of their parents.
5. The techno-based Universal Design for Learning intervention using Thirukkural does not significantly influence the life skills of children with mild intellectual disabilities.

Review of Relevant Literature

A substantial body of research underscores the importance of life skills instruction and technology-assisted learning for individuals with intellectual disabilities. The following review examines key studies related to life skills training, technology integration, UDL frameworks, social stories and the pedagogical relevance of Thirukkural.

Life Skills Training for Individuals with Intellectual Disabilities

Bouck (2010) conducted a comprehensive review of life skills training for students with intellectual disabilities both in and out of school. The findings revealed that life skills instruction is a critical component of special education and that systematic training programmes significantly improve independent functioning. Behroz-

Sarcheshmeh et al. (2017) examined the effect of life skills training on the social skills of high school students with intellectual disabilities and reported significant improvements in interpersonal relationships, communication and social adaptation following structured intervention. Similarly, Maria and Nikolaos (2017) investigated strategies for strengthening social skills among students with intellectual disabilities at the secondary level and found that targeted skill-based programmes enhanced peer interaction and community participation. More recently, Yuvaraj et al. (2025) demonstrated the positive impact of inclusive recreational and life-skill activities on the physical, personal care and communication skills of students with intellectual disabilities, providing evidence that multi-modal activities can support holistic development.

Technology-Based Interventions for Learners with Intellectual Disabilities

Technological tools have increasingly been recognised as effective mediators of learning for children with intellectual disabilities. Alkinj (2026) explored video prompting and error correction procedures for teaching personal hygiene skills to individuals with developmental disabilities, reporting that video-based instruction enhanced skill acquisition and maintenance. Chang, Hwang and Ou (2025) proposed a motivational model-based digital game approach for fostering life skills of learners with intellectual disabilities and found that interactive technologies significantly improved learner engagement and skill retention. Berrezueta-Guzman, Chen and Wagner (2025) developed a therapeutic role-playing virtual reality game for children with intellectual disabilities and demonstrated its potential to enhance social and emotional learning in immersive digital environments. Yan and Jin (2026) conducted a qualitative study on enhancing mathematics learning for students with intellectual and developmental disabilities in China using instructional technology and highlighted the importance of adaptive digital tools in inclusive classrooms.

Universal Design for Learning in Special and Inclusive Education

Universal Design for Learning (UDL) provides a research-validated framework for designing instruction that meets the diverse needs of all learners. By incorporating multiple means of representation, engagement and expression, UDL supports learners who may struggle with traditional one-size-fits-all instructional approaches. Chang et al. (2025) demonstrated that UDL-aligned digital game-based training approaches are particularly effective for learners with intellectual disabilities, as they offer flexible participation pathways and immediate feedback. The application of UDL principles in inclusive educational settings ensures that children with special needs are not marginalised but are actively engaged in meaningful learning experiences. Özsavran and Çömez (2026) further highlight the importance of creative and inclusive programmes for individuals connected to the intellectual disability community, emphasising the role of psychological and social well-being alongside academic skill development.

Social Stories as an Instructional Tool

Social stories have been widely recognised as an effective instructional strategy for children with intellectual and developmental disabilities. They provide structured, narrative-based descriptions of social situations that help learners understand expected behaviours and appropriate responses. Berrezueta-Guzman et al. (2025) incorporated role-playing and narrative elements in virtual environments for children with intellectual disabilities, findings that align with the theoretical foundations of social stories as tools for social learning. The use of social stories in conjunction with Thirukkural couplets in the present study offers a culturally grounded and contextually meaningful approach to life skills instruction.

Thirukkural as a Resource for Value Education

Thirukkural, composed by the Tamil poet-philosopher Thiruvalluvar, has long been recognised as a seminal text on ethics, governance and human values. Nagarajan (2005) examined Thiruvalluvar's vision of polity and economy as presented in Thirukkural, affirming

the enduring relevance of its moral philosophy. Anita and Subalalitha (2019) explored the discourse structure of Thirukkural using natural language processing techniques, demonstrating its complex organisational logic that can be harnessed for educational purposes. Ramalingam (2020) analysed Thirukkural through the lens of cognitive poetic structure, arguing that its couplets are designed to provoke deep conceptual understanding and ethical reflection. Dhanalakshmi and Krishnan (2025) further examined the life-ethics expressed in Thirukkural, establishing its direct relevance to value education and moral development. Oorkolil (2025) contributed to the discourse by exploring Thirukkural's philosophical dimensions, reinforcing its status as a universal ethical guide. Collectively, these studies affirm that Thirukkural is not only a literary masterpiece but also a rich pedagogical resource for moral and life skills education.

Summary

The review of literature reveals that life skills training, technology-based instruction, UDL principles, social stories and value education through culturally embedded texts are all independently effective in supporting children with intellectual disabilities. However, there is a notable gap in research that integrates all these elements into a single, cohesive intervention programme. The present study addresses this gap by combining techno-based UDL strategies with Thirukkural-based social stories to enhance life skills among children with mild intellectual disabilities at the secondary level.

2. Methodology

Design: The methodology adopted for the present study entitled "Application of UDL Principles for the Life skill Development of CWMID through Thirukkural-A Tamil Verse" is described under the following headings.

The present study adopted a quasi-experimental research design, specifically the pre-test and post-test single group design. In this design, the life skills of the selected children were assessed before and after the implementation of the

intervention programme. The design of the study can be represented as:

Pre-Test → Intervention → Post-Test

Area of the Study

The study was conducted in four inclusive schools that provide educational services for children with mild intellectual disabilities. These schools were selected to examine the effectiveness of the techno-based intervention programme in an inclusive learning environment.

Participants/Sample: The sample for the study consisted of 60 children with mild intellectual disabilities, aged between 11 and 14 years. The participants were selected using the stratified random sampling technique. The sample included 30 boys and 30 girls. The children were further categorised into two age groups: 11–12 years and 13–14 years. The identification of mild intellectual disability was based on medical history and school records.

Variables of the Study

The present study includes the following variables.

Independent Variables

- Age group (11–12 years and 13–14 years)
- Gender (Boys and Girls)
- Locality (Rural and Urban)
- Educational qualification of parents (10th / +2 and UG / PG)

Dependent Variable

The dependent variable of the present study is Life Skills. Life skills refer to the abilities that enable individuals to deal effectively with the challenges of everyday life and to function independently within society. For children with mild intellectual disabilities, life skills play an essential role in improving social behaviour, emotional regulation, communication and personal independence (Behroz-Sarcheshmeh et al., 2017; Bouck, 2010).

The life skills selected for the present study were derived from the ethical and moral teachings of Thirukkural, which has been widely regarded as a

universal guide for righteous living (Nagarajan, 2005; Dhanalakshmi & Krishnan, 2025). The selected life skills include:

- Not hurting others
- Money management
- Truthfulness
- Courtesy
- Learning
- Love and affection
- Proper use of water
- Gratitude
- Time management
- Speaking pleasant words

Among these skills, money management has been included as an important life skill for children with special needs. In the Indian socio-cultural context, money carries ethical significance because every Indian currency note bears the image of Mahatma Gandhi, symbolising truth, honesty and integrity. Therefore, teaching money management to children is not limited to financial awareness alone but also involves developing truthfulness and moral responsibility while handling money. The ethical teachings of Thirukkural emphasise values such as honesty, charity, gratitude and moral discipline (Dhanalakshmi & Krishnan, 2025; Ramalingam, 2020). These values support the development of responsible behaviour patterns among children with special needs and help them become socially responsible members of the inclusive community. Thus, integrating Thirukkural-based value education with life skills training enables children with mild intellectual disabilities to develop not only functional skills but also strong moral foundations (Oorkolil, 2025).

Instruments: A Life Skills Questionnaire consisting of 50 items was developed by the investigator to measure the life skills of children with mild intellectual disabilities. The questionnaire included items related to ten life skill areas such as not hurting others, money management, truthfulness, courtesy, learning, love and affection, proper use of water, gratitude,

time management and speaking pleasant words. The questionnaire was designed in a simple and clear format so that teachers and caregivers could respond based on the observed behaviour of the children. The same questionnaire was administered during both the pre-test and post-test stages to assess the effectiveness of the intervention programme.

Procedure: Intervention Programme

The intervention programme was designed using Thirukkural-based social stories integrated with Universal Design for Learning principles (Chang et al., 2025). Social stories have been documented as an effective instructional tool for children with intellectual disabilities, providing structured narrative guidance for navigating real-life situations (Berrezueta-Guzman et al., 2025). The programme incorporated:

- Multiple means of representation
- Multiple means of engagement
- Multiple means of action and expression

The training programme included role play, activity-based learning, visual and auditory learning materials and techno-based applications to help children understand and practise life skills effectively (Yuvaraj et al., 2025). The use of video-based and interactive digital tools further

strengthened skill acquisition and maintenance (Alkinj, 2026; Chang et al., 2025). The intervention programme was implemented for a period of eight months.

Pilot Study

A pilot study was conducted to test the feasibility and reliability of the research instrument before conducting the main study. The pilot study was carried out with 30 children with mild intellectual disabilities who were not included in the final sample. The Life Skills Questionnaire was administered to the selected participants and the responses were carefully analysed. Based on the feedback obtained from the pilot study, certain modifications were made to improve the clarity and relevance of the items included in the Questionnaire. The revised instrument was further reviewed by experts in the field of special education, teacher education and psychology to ensure its suitability for measuring life skills among children with mild intellectual disabilities. The reliability of the Life Skills Questionnaire was established using the Cronbach's Alpha method and the reliability coefficient was found to be 0.874, indicating a high level of internal consistency. Therefore, the tool was considered reliable and appropriate for conducting the main study.

Data Analysis: Reliability Statistics

Table 1 Reliability Statistics of Life Skills Questionnaire

Cronbach's Alpha	N of Items
0.874	50

The Cronbach's Alpha value of **0.874** indicates a high level of internal consistency among the items in the Life Skills Questionnaire. This value is above the acceptable level of 0.70, indicating

that the tool is reliable and suitable for measuring life skills among children with mild intellectual disability.

Case Processing Summary

Table 2 Case Processing Summary

Cases	N	%
Valid	30	100
Excluded	0	0
Total	30	100

The table 2 shows that all **30 cases were valid** and no data were excluded during the reliability

analysis. This indicates that the dataset was complete and suitable for statistical analysis.

Descriptive Statistics

Table 3 Descriptive Statistics of Pre-Test and Post-Test Scores

Test	N	Mean	Std. Deviation
Pre-Test	60	50.53	16.43
Post-Test	60	58.00	12.00

Table 3 indicates that the mean score of the post-test (58.00) is higher than the mean score of the pre-test (50.53). This shows that the life skills of the students improved after the implementation of the techno-based UDL intervention programme. The reduction in standard deviation

from 16.43 to 12.00 indicates greater consistency in student performance after the intervention, consistent with findings reported by Chang et al. (2025) and Yuvaraj et al. (2025) on the positive effects of technology-integrated life skills training.

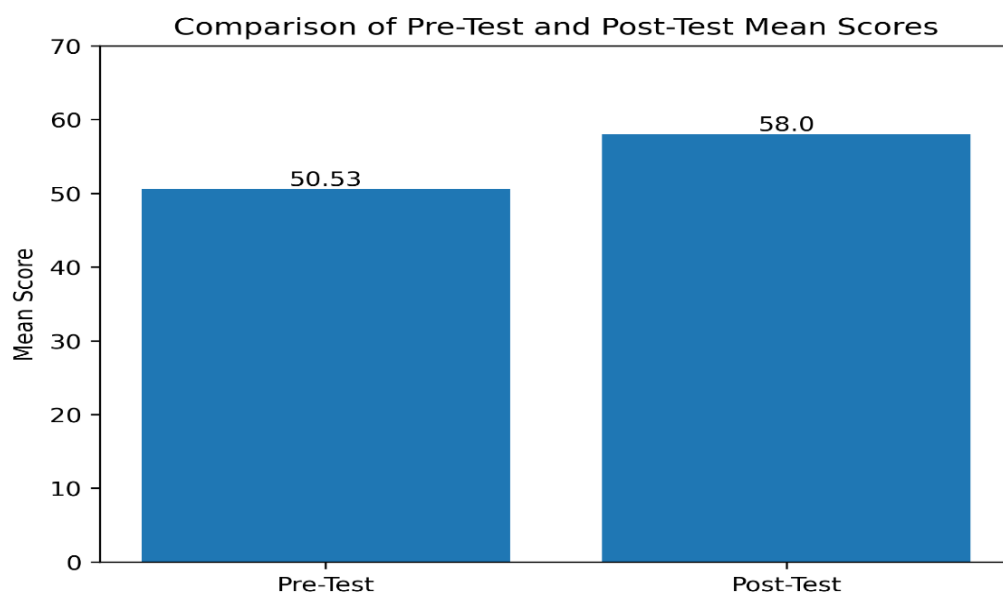
Paired Samples Statistics

Table 4 Paired Samples Statistics

Test	Mean	N	Std. Deviation	Std. Error Mean
Pre-Test	50.53	60	16.43	2.12
Post-Test	58.00	60	12.00	1.55

The paired samples statistics show that the **post-test mean score is higher than the pre-test mean score**, indicating improvement in life skills after the intervention programme.

Figure 1 Descriptive Statistics of Pre-Test and Post-Test Scores



Paired Samples Correlation

Table 5 Paired Samples Correlations

Variables	N	Correlation	Sig.
Pre-Test & Post-Test	60	0.642	0.000

The correlation value of **0.642** indicates a moderate positive relationship between the pre-test and post-test scores. The significance value ($p < 0.05$) indicates that the relationship is statistically significant.

Paired Samples Test (t-test)

Table 6 Paired Samples t-test

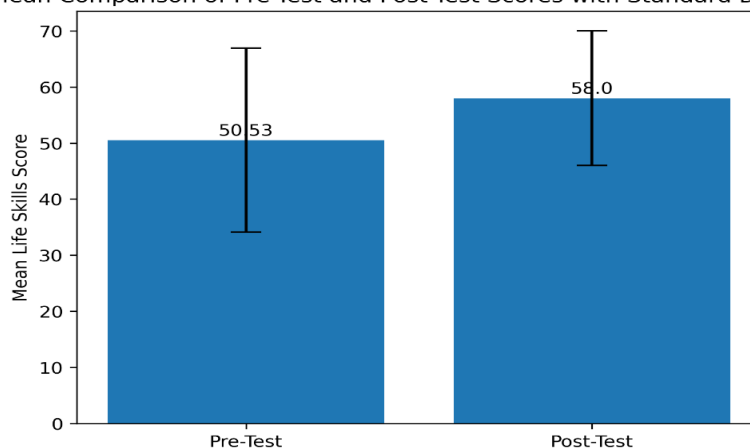
Variables	Mean Difference	Std. Deviation	t-value	df	Sig.(2-tailed)
Pre-Test – Post-Test	-7.47	10.52	-5.89	59	0.000

The paired sample t-test shows that the calculated t-value (-5.89) is significant at 0.000 level ($p < 0.05$). This indicates that there is a significant difference between the pre-test and post-test scores. Therefore, the techno-based UDL intervention programme significantly improved the life skills of children with mild intellectual

disability. This finding is consistent with the results reported by Behroz-Sarcheshmeh et al. (2017) and Maria and Nikolaos (2017), who similarly found significant gains in life skills and social competence following structured intervention programmes for students with intellectual disabilities.

Figure 2 Mean Comparison of Pre-Test and Post- Test Scores with Standard Deviation

Mean Comparison of Pre-Test and Post-Test Scores with Standard Deviation



Gain Score Analysis

Table 7 Gain Score Analysis

Test	Mean Score
Pre-Test Mean	50.53
Post-Test Mean	58.00
Gain Score	7.47

The gain score of 7.47 indicates a noticeable improvement in the life skills of the children after the intervention programme. This improvement demonstrates the effectiveness of the techno-based Universal Design for Learning approach integrated with Thirukkural-based social stories (Nagarajan, 2005; Anita & Subalalitha, 2019).

Findings of the study

- The reliability of the Life Skills Questionnaire was established using Cronbach's Alpha method and the reliability coefficient was found to be 0.874, indicating a high level of internal consistency and confirming that the tool is reliable for the present study.
- The analysis of the pre-test scores revealed that the children with mild intellectual disabilities had a moderate level of life skills before the implementation of the intervention programme, a finding consistent with the baseline profiles reported by Bouck (2010) and Behroz-Sarcheshmeh et al. (2017).
- The comparison of pre-test and post-test mean scores showed a clear improvement in the life skills of the children after the intervention programme.
- The post-test mean score was higher than the pre-test mean score, indicating that the techno-based Universal Design for Learning intervention had a positive effect on the development of life skills, corroborating the results of Chang et al. (2025) and Yuvaraj et al. (2025).
- The gain score analysis revealed a noticeable improvement in the life skills of the children after participating in the techno-based learning programme.
- The integration of Thirukkural-based social stories with Universal Design for Learning principles helped children understand moral values such as kindness, truthfulness, gratitude, courtesy and polite communication (Dhanalakshmi & Krishnan, 2025; Ramalingam, 2020).
- The use of multiple learning approaches such as visual, auditory, kinesthetic and tactile

learning experiences enabled children with mild intellectual disabilities to participate actively in learning activities, as advocated in UDL research (Chang et al., 2025).

- Activity-based learning strategies such as role play, social stories and technological applications improved the engagement and motivation of the children, consistent with findings by Berrezueta-Guzman et al. (2025) and Alkinj (2026).
- The intervention programme contributed to the development of important life skills including not hurting others, money management, truthfulness, courtesy, learning, love and affection, gratitude, time management and speaking pleasant words.
- Overall, the findings of the study clearly indicate that the techno-based Universal Design for Learning approach is effective in enhancing life skills among children with mild intellectual disabilities.

3. Results

- The reliability of the Life Skills Questionnaire was established using Cronbach's Alpha method and the reliability coefficient was found to be 0.874, indicating a high level of internal consistency and confirming that the tool is reliable for the present study.
- The analysis of the pre-test scores revealed that the children with mild intellectual disabilities had a moderate level of life skills before the implementation of the intervention programme, a finding consistent with the baseline profiles reported by Bouck (2010) and Behroz-Sarcheshmeh et al. (2017).
- The comparison of pre-test and post-test mean scores showed a clear improvement in the life skills of the children after the intervention programme.
- The post-test mean score was higher than the pre-test mean score, indicating that the techno-based Universal Design for Learning intervention had a positive effect on the development of life skills, corroborating the

results of Chang et al. (2025) and Yuvaraj et al. (2025).

- The gain score analysis revealed a noticeable improvement in the life skills of the children after participating in the techno-based learning programme.
- The integration of Thirukkural-based social stories with Universal Design for Learning principles helped children understand moral values such as kindness, truthfulness, gratitude, courtesy and polite communication (Dhanalakshmi & Krishnan, 2025; Ramalingam, 2020).
- The use of multiple learning approaches such as visual, auditory, kinesthetic and tactile learning experiences enabled children with mild intellectual disabilities to participate actively in learning activities, as advocated in UDL research (Chang et al., 2025).
- Activity-based learning strategies such as role play, social stories and technological applications improved the engagement and motivation of the children, consistent with findings by Berrezueta-Guzman et al. (2025) and Alkinj (2026).
- The intervention programme contributed to the development of important life skills including not hurting others, money management, truthfulness, courtesy, learning, love and affection, gratitude, time management and speaking pleasant words.
- Overall, the findings of the study clearly indicate that the techno-based Universal Design for Learning approach is effective in enhancing life skills among children with mild intellectual disabilities.

4. Discussion

- The integration of Thirukkural-based social stories with Universal Design for Learning principles helped children understand moral values such as kindness, truthfulness, gratitude, courtesy and polite communication (Dhanalakshmi & Krishnan, 2025; Ramalingam, 2020).

- The use of multiple learning approaches such as visual, auditory, kinesthetic and tactile learning experiences enabled children with mild intellectual disabilities to participate actively in learning activities, as advocated in UDL research (Chang et al., 2025).
- Activity-based learning strategies such as role play, social stories and technological applications improved the engagement and motivation of the children, consistent with findings by Berrezueta-Guzman et al. (2025) and Alkinj (2026).
- The intervention programme contributed to the development of important life skills including not hurting others, money management, truthfulness, courtesy, learning, love and affection, gratitude, time management and speaking pleasant words.
- Overall, the findings of the study clearly indicate that the techno-based Universal Design for Learning approach is effective in enhancing life skills among children with mild intellectual disabilities
- Limitations of the study: Since this present audio clip is only in one language Tamil, it could be applied to all the Tamil language speaking people. For the other National and International languages one has to translate into their language and then show that audio with the same video clip shown here. Also one has to expect all the class rooms have to have the digital lab facility. The author hopes that in future it is quite possible.

5. Conclusion

Life skills are essential for the personal and social development of children, especially for those with intellectual disabilities. These skills help them to cope with everyday challenges, interact effectively with others and lead a more independent life (Bouck, 2010; Maria & Nikolaos, 2017). The present study was conducted to examine the effectiveness of techno-based Universal Design for Learning through Thirukkural in enhancing life skills among children with mild intellectual disabilities. The results of the study revealed that the intervention

programme significantly improved the life skills of the children. The use of Thirukkural-based moral values combined with modern educational technology and Universal Design for Learning principles created an effective and inclusive learning environment. The programme enabled children to develop positive social behaviour, improve communication skills and understand important moral values necessary for everyday life (Dhanalakshmi & Krishnan, 2025; Nagarajan, 2005).

The study also highlighted the importance of learner-centred teaching strategies, such as activity-based learning, role play, social stories and multimedia resources, in supporting the learning needs of children with mild intellectual disabilities (Berrezueta-Guzman et al., 2025; Chang et al., 2025). These strategies helped the learners actively engage in the learning process and practise life skills in real-life situations. Furthermore, the effectiveness of video prompting and interactive technology in supporting skill acquisition (Alkinj, 2026) reinforces the value of techno-based interventions in special education contexts.

Thus, the findings of the study clearly demonstrate that techno-based Universal Design for Learning strategies integrated with Thirukkural values can effectively enhance life skills among children with mild intellectual disabilities in inclusive educational settings. The study suggests that teachers and special educators may adopt similar innovative teaching approaches to promote life skill development, moral values and social competence among children with special needs.

- Life skills are essential for the personal and social development of children, especially for those with intellectual disabilities. These skills help them to cope with everyday challenges, interact effectively with others and lead a more

independent life (Bouck, 2010; Maria & Nikolaos, 2017). The present study was conducted to examine the effectiveness of techno-based Universal Design for Learning through Thirukkural in enhancing life skills among children with mild intellectual disabilities. The results of the study revealed that the intervention programme significantly improved the life skills of the children. The use of Thirukkural-based moral values combined with modern educational technology and Universal Design for Learning principles created an effective and inclusive learning environment. The programme enabled children to develop positive social behaviour, improve communication skills and understand important moral values necessary for everyday life (Dhanalakshmi & Krishnan, 2025; Nagarajan, 2005).

- The study also highlighted the importance of learner-centred teaching strategies, such as activity-based learning, role play, social stories and multimedia resources, in supporting the learning needs of children with mild intellectual disabilities (Berrezueta-Guzman et al., 2025; Chang et al., 2025). These strategies helped the learners actively engage in the learning process and practise life skills in real-life situations. Furthermore, the effectiveness of video prompting and interactive technology in supporting skill acquisition (Alkinj, 2026) reinforces the value of techno-based interventions in special education contexts.

- Thus, the findings of the study clearly demonstrate that techno-based Universal Design for Learning strategies integrated with Thirukkural values can effectively enhance life skills among children with mild intellectual disabilities in inclusive educational settings. The study suggests that teachers and special educators may adopt similar innovative teaching approaches to promote life skill development, moral values and social competence among children with special needs.

References

- Alkinj, I. (2026). Video prompting and error correction procedures for teaching personal hygiene skills to individuals with developmental disabilities. *Disabilities*, 6(1), 5.
- Anita, R., & Subalalitha, C. N. (2019, December). Building discourse parser for Thirukkural. In *Proceedings of the 16th International Conference on Natural Language Processing* (pp. 18–25).

- Behroz-Sarcheshmeh, S., Karimi, M., Mahmoudi, F., Shaghghi, P., & Jalil-Abkenar, S.S. (2017). Effect of training of life skills on social skills of high school students with intellectual disabilities. *Practice in Clinical Psychology*, 5(3), 177–186.
- Berrezueta-Guzman, S., Chen, W., & Wagner, S. (2025, August). A therapeutic role-playing VR game for children with intellectual disabilities. In *2025 International Conference on Metaverse Computing, Networking and Applications (MetaCom)* (pp. 389–396). IEEE.
- Bouck, E. C. (2010). Reports of life skills training for students with intellectual disabilities in and out of school. *Journal of Intellectual Disability Research*, 54(12), 1093–1103.
- Chang, C. C., Hwang, G. J., & Ou, L. S. (2025). Fostering the life skills of learners with intellectual disabilities using interactive technologies: A motivational model-based digital game-based training approach. *Journal of Computer Assisted Learning*, 41(2), e70026.
- Dhanalakshmi, V., & Krishnan, G. (2025). திருக்குறள்-வாழ்வியல் நெறிகள் [Thirukkural-Vazhviyal Nerigal]. *Tamilnam International Research Journal of Tamil Studies*, 2(02), 1025–1034.
- Maria, D. K., & Nikolaos, P. (2017). Strengthening social skills in students with an intellectual disability in secondary education. *Sino-US English Teaching*, 14(6), 345–359.
- Nagarajan, K. V. (2005). Thiruvalluvar's vision: Polity and economy in Thirukkural. *History of Political Economy*, 37(1).
- Oorkolil, V. (2025). திருக்குறள் ஒரு சமணத் தத்துவப் படைப்பாக [Thirukkural as a Jain Philosophical Work]. *Tamilnam International Research Journal of Tamil Studies*, 2(01), 826–845.
- Özsavran, M., & Çömez, B. (2026). Enhancing psychological resilience in mothers of children with intellectual disabilities through marbling art. *Journal of Pediatric Nursing*, 86, 355–365.
- Ramalingam, S. (2020). அறிவார்ந்த கவிதைக் கட்டமைப்பு அணுகுமுறையில் திருக்குறள் [Cognitive Poetic Structure in Thirukkural]. *Journal of Valartamil*, 1(2), 111–121.
- Yan, T., & Jin, Y. (2026). Enhancing mathematics learning for students with intellectual and developmental disabilities in China: A qualitative study of instructional support. *Journal of Intelligence*, 14(2), 18.
- Yuvaraj, D., Premkumar, G., Aravindh, M., Mohamedprince, M., & Asaraf, R. K. (2025). Impact of inclusive recreational and life-skill activities on physical, personal care and communication skills of students with intellectual disability. *Pedagogy of Physical Culture and Sports*, 29(4), 320–329.

Acknowledgements (Optional)

Though the author is doing the research work without any funding from any agency, the support and technical assistance given by the Institution is acknowledged with gratitude.

Author Declaration

The author declares that this is the original work carried out by her and it has not been carried out by any other researcher

There is no conflict of interest with anybody and in the Institution as well where she is pursuing her research work.