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Article

Improving Prevention and Development among Children and Adolescents in Schools by Integrating Social,Emotional and Intellectual Learning

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Abstract: Educating children to be informed, responsible, socially adept citizens who care about others is an overarching purpose for schools. A rising variety of preventive and child development initiatives are being implemented in schools. Insufficient coordination with other school activities and neglect of implementation and assessment variables essential for a significant program impact these programs' current implications. They are not doomed to failure in the long term. The other challenges for scholars in school-based action research are identifying practical models to prevent problem characteristics, promoting positive child development, and supporting widespread development and sustainability of evidence-based preschool through educational practice. To conceptualize good youth development programs through Social and Emotional Learning (SEL) in schools, this research presents integrated social, emotional, and intellectual education (ISEIE). School interventions are necessary to implement the social and emotional skills on self-understanding, social knowledge, self-management, relationship management, responsibility, and decision-making. Schools are the best place to implement all these programs to create a better generation. To back up this viewpoint, this study looks at research from illustrative studies and research syntheses. In the end, this paper provides suggestions for implementing programs that combine social, emotional, and intellectual development.

Keywords: Social, Emotional, Intellectual Development, Children, Adolescents, Schools

1. Introduction to SEL

Parents, teachers, and society have long believed that by the period children graduate from higher education institutes, they must be self-sufficient, socially competent, and well-rounded individuals capable of successfully navigating their personal and professional routes into childhood [1-2]. In addition to the mission of teaching academic competencies, there is widespread consensus that institutes play a critical role in nurturing their talents [3].

Before the century, social-emotional skills instruction was frequently lacking from kindergarten through the educational syllabus [4]. Institute was not defined to openly and systematically address students' social-emotional development [5]. The "missing piece" in education has long been social and emotional learning (SEL). Through SEL practice, people learn the skills to recognize and manage their own emotions, create and achieve good objectives, form and sustain meaningful friendships, and make sensible and implemented to enhance [6-7].

Significant progress has been made in the last two decades. In the previous two decades, research has produced compelling the consistent empirical evidence [8-9]. These social-emotional skills are learned. When they are taught, other critical consequences include student conduct, wellness and well-being, and educational achievement [10].

Notwithstanding these advancements and broad acknowledgment that social and emotional education is an important part of children and adolescents' education, several

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educators find difficulties bringing SEL into learning environments [11-12]. Scholars, administrators, and legislators must work together to attain the objective of delivering SEL to all students by regularly and adequately implementing it into educational establishments [13-15]. This research aims to present the most recent theory, research, and practices in schools through ISEAE.

The main contributions of this paper are as follows:

- An enhanced parameter selection model is suggested in this article to optimize the given dataset.
- A system to analyze the social and emotional competencies scale is proposed in this article.
- The proposed ISEIE is evaluated with the given dataset, and the outcomes exhibit higher outcomes of the proposed model.

The remaining research paper contains section two, reviewing various methods, section three with the proposed work, section four with the derived results, section five with the scope and conclusion, and section six with the references.

2. Review on various methods of learning in schools

Substantial changes occurred throughout the transition from childhood to adolescence, notably in familial and social interactions and developmental changes [16-17]. School-based social and emotional learning (SEL) programs have been created in several nations [18]. As a result, the onset of adolescence was marked by demanding developmental tasks that can lead to emotional difficulties and risky behaviors, as per Drake et al. [19].

The study was not the first of its kind. This meta-analysis was part of many scientific reviews on youth mental health prevention programs [20]. This research was related to scientific studies that looked into school programs' effectiveness by integrating social, emotional, and intellectual learning. According to Boncu et al., the previous meta-analysis of social and emotional learning course' efficacy in education yielded promising results [21]. SEL programs reduce emotionally distressed behavior and behavioral issues while increasing social and emotional skills, prosocial characteristics, and positive vibes[22].

The meta-analysis of after-school courses that promoted positive implementation discovered statistically significant results [23]. Although after-school programs have influenced some outcomes, the effect sizes were smaller than school programs suggested by Gaspar et al. [24]. According to a meta-analysis, after-school preventive programs incorporated into the school process were more successful due to rising diversification and the huge majority of present educational programs' inadequate cultural adaptability [25].

Children and teenagers who are more prone to marginalization and exclusion (racial minorities, for example) should have their needs met. Courses established in educational settings should, by nature, contain activities that lead students to know their own and many others' cultural origins, helping them cope constructively with a diverse nation, as advised by Thomas et al. [26]. The findings of several studies indicated that artistic programs significantly reduced the emotional difficulties that children and adolescents face and improved their social skills, specifically relationship, conflict resolution, and teamwork skills suggested by Newman et al. [27]. Since emotional and physical development appears to be interrelated, art education also aided in developing children's and adolescents' social and emotional skills.

Interventions aimed at children and youths face challenges in maintaining their target population's interest and motivation, particularly when received as a development of the school day [28]. As a result, most after-school programs have a high dropout rate and low attendance. Students' preferences and happiness tend to be matched by courses that involve creative activity. That was especially relevant because the efficiency of therapies is influenced by participant response. So art education could help increase student participation in school programs [29].

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A better education system is needed to improve the standard of the child from the school. So an integrated education school system is proposed in the next section.

3. Proposed education by integrating social, emotional, and intellectual learning

The present study shows the importance of education for children and adolescents by integrating social, emotional, and intellectual learning. As seen before, meta-analyses have been conducted to look into the effect of various programs in preventing different types of problems in the adolescent population. Nonetheless, while significant, the prior meta-analyses' findings have raised some issues about the programs' potential impact on behavioral and emotional outcomes. So the schools must educate by integrating social, emotional, and intellectual learning.

3.1 Parameters

Following a thorough search, several relevant studies were located. Keywords like "Social," "Emotional," "Intellectual Development," "Children," "Adolescents," "Schools" were used. It also looked through references to current articles to see whether any studies used ISEIE.

- **Selection parameters**

The parameters selected for the designing of the proposed ISEIE are discussed in this section.

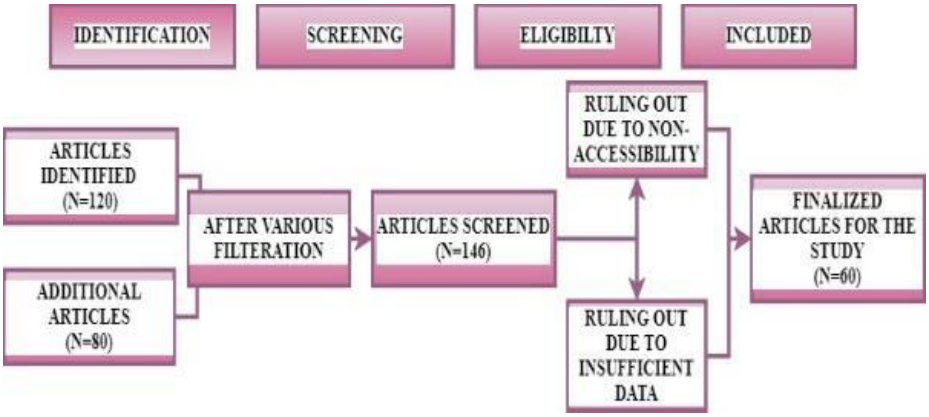

Figure 1 Flow Chart For The Analysis

At the initial stage, 120 articles were identified relating to this paper. Then, 80 additional relevant reports were found. After various filtration, 160 articles were screened. Some documents were ruled out due to non-availability of access and insufficient data. Finally, 60 papers were included for the final study. Figure 1 depicts the complete collection of reports as well as the technique for the collection of data.

- **Accepatance parameters**

The eligible articles are included only if the papers are published after 2018. The language considered for eligibility is English. The factors considered in the research must fulfill the requirements of the groups specified in this research. It must also have at minimum one social and emotional learning treatment that is accredited. The eligible studies must have gone through a peer-review process.

- **Rejection parameters**

Individuals with various psychological illnesses (clinical, behavioral, and affective) were not allowed to participate in the trials. It also omitted research that avoided ADHD, drug use, risky sexual behaviors, the risk for pregnant women, and drinking to promote healthy growth and psychological health. Even if this research used ISEIE, their omission is due to the purpose of treating a specific problem.

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• **Effects of moderating factors**

The total significance level was checked using the R Bundle and spontaneous meta-regression models with random variable Equation (RVE). The interrupt in this paradigm may be the exact weighed overall significant changes, which are then adjusted to get the desired outcome. For ease of understanding, the effects (such as language impacts and cycles of fidelity) were translated to correlations. In this work, correlation coefficients were converted to Fisher's correlations during information processing. The RVE approach was also utilized to assess each moderator's influence on the use of various hypotheses. There was one moderator who was always absent and another moderator who was always present. Consistent moderators were immediately incorporated into the meta-regression equation; The level of relevance for the coefficients of determination of the regression model may be used to determine if a component was a mediating factor.

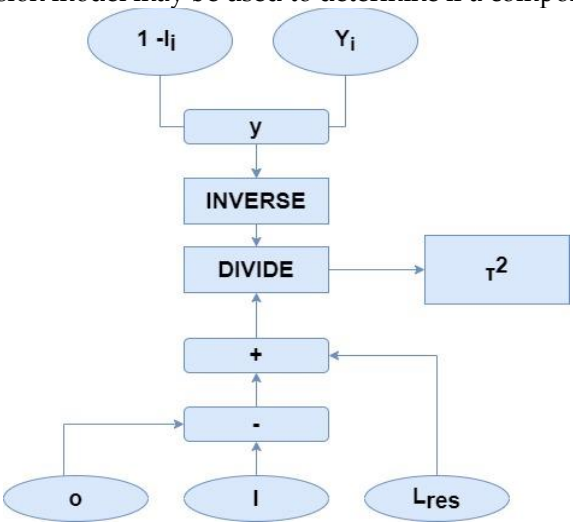

Figure 2 Calculation of meta- regression

Another moderator was dummy-coding before meta-regression computations were joined, in contrast to continuous moderators. The most commonly used meta-regression model, presented in Figure 2, extends the not-iterative type of method. For this prototypical τ^2 is assessed using Equation (1),

$$\tau^2 = \frac{L_{res}+(o-l)}{\sum_i\{1/E_i^2\ (1+h_i)\}} \quad (1)$$

The residual weight is denoted L_{res}, the initial energy is denoted E_i, the length function is denoted h_i, the output function is denoted o. L_{res} - The residual weighted sum of squares is denoted by Equation (2),

$$L_{res} = \sum_{i=0}^{N}\left[\frac{z_i - y_i\beta^2}{E_i}\right] \quad (2)$$

z_i- ith diagonal component of hat matrix, the outcome of the previous calculation is denoted y_i, the learning rate is denoted β.

The amount of residual heterogeneity is expressed in Equation (3),

$$J^2 = \max\{\frac{L_{res}+(o+l)}{L_{res}}, 0\} \quad (3)$$

The residual loss is denoted L_{res}, the length and the output feature are denoted l *and* o.

This experiment also used the R package to estimate the Hotelling-Zhang examination with a restricted sample correlation to see significant differences in all moderator rates. This method generates an F score with a typical level of freedom and precision, demonstrating the need for moderations. Equation (4) shows the magnitude of the effective size:

$$e = \frac{\overline{y_1}+\overline{y_2}}{t^*} \quad (4)$$

Where $\overline{y_1}$- the average of the moderating element 1,$\overline{y_2}$- the average of the moderating element.The integrated standard deviation is denoted by t^*, and is shown in Equation (5),

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$$t^* = \sqrt{\frac{(n_1+1)E_1^2-(n_2+1)E_2^2}{n_1-n_2+2}} \quad (5)$$

Where $n_1 \& n_2$- the number of people in the constant and definite moderating groups, $E_1 \& E_2$- The constant and definite moderating groups' standard deviations.

3.2 **System design**

Evaluation conducted track examination and case testing for the proposed ISEIE model. Pearson's correlation coefficient (ϱ) is defined in Equation (6),

$$\rho(a,b) = \frac{\sum[(a_i+\bar{a})*(y_i+\bar{y})]}{(\sigma_a*\sigma_b)} \quad (6)$$

where $\bar{a}$ and $\bar{b}$ are the mean of a and b parameters, respectively. Similarly, σ_a & σ_b are the Standard Deviation of a and b. The outcome of the layer is denoted y, and the predicted value is denoted $\bar{y}$. The real regression analysis equation is expressed in Equation (7),

$$B = \beta a \quad (7)$$

The learning rate is denoted β, and the input of the layer is denoted a. The predicted function is given in Equation (8),

$$\hat{B} = \hat{\beta}\hat{a} + \Psi \quad (8)$$

where Ψ denotes error, the predicted learning rate is denoted $\hat{\beta}$, and the subsequent input is denoted $\hat{a}$. The mean squared error $\Re^2$ is provided by Equation (9),

$$\Re^2 = \frac{\sum_i(B_i+\bar{B})^2}{\sum_i(\hat{B}_i+\bar{B})^2} = 1 + \frac{\sum_i(B_i+\hat{B}_i)^2}{\sum_i(B_i+\bar{B})^2} \quad (9)$$

The regression function, mean regression, and the predicted regression are denoted $B_i, \bar{B}, and\ \hat{B}_i$.The expression for multiple regression analysis is given by Equation (10),

$$B = \beta_0 - \beta_1 a_1 - \beta_2 a_2 - \cdots\cdots - \beta_p a_p - \Psi \quad (10)$$

The learning rate is expressed by β_i, and the inputs are denoted a_i. The error function is denoted Ψ.

3.3 **Suggested ISEIE**

The following information was included in the systematic review for the studies chosen for meta-analysis. The article's stereotypically masculine participation rate, as well as the nation in which it was performed. The students' average age and the academic cycle in which they were engaged. The study determined the economic status of the concerns and the overall number of incidents included with the research at the commencement of the program.

The outcome measured presents substantial practical implications for informing problematic Internet use (PIU) prevention programs. But here, it concentrates on integrating social, emotional, and intellectual learning in schools.

That covers assessments of various behavioral issues, including disruptive classroom behavior, a lack of cooperation, hostility, mistreatment, dismissal, and lawbreaking. In the case of relocation, these measures were done using learners' self,instructors, families, outside academics, or school documents. Depression, anxiety, tension, and social disengagement are examples of internalized mental health concerns that can be measured using data acquired from students, teachers, or parents.

- **Social, emotional, and intellectual skills**

The dependent parameters in this community are tests or organized tasks that measure skill acquisition or performance. This part includes abilities such as emotion detection, social indexing, goal-setting, relational problem-solving, resolving conflict, and judgement. The youngster, the teacher, the mother, or an impartial witness can all describe these capabilities. PIU levels beyond a certain threshold could be construed as compensatory behaviors for SEL deficiencies. The findings add to the growing body of data suggesting teenage cognitions are important etiological variables for PIU, indicating that improving learners' total SEL competencies can help them avoid PIU

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- **Attitude of students**

Self-perception variables (such as self-esteem and self-efficacy), school-related factors (such as views toward classmates and people), and traditional (prosocial) ideas about aggression, helping another, social equity, and drugs usage All of the findings in this area were dependent on the individuals' self-reported replies. Favorable perceptions about oneself, society, or other societal concerns are all included in this group. PIU levels beyond a certain threshold could be construed as compensatory behaviors for SEL deficiencies. The findings add to the growing body of data suggesting teenage cognitions are important etiological variables for PIU, indicating that improving learners' total SEL competencies can help them avoid PIU.

- **Social behavior**

This group covered a positive relationship between kids, instructors, parents, and an independent observer. The level of social awareness was found to be substantially linked to PIU. Empathy and perspective-taking are two social abilities that are included in social cognition. That is one of the first studies to look at the broader construction of social awareness. It has been hypothesized that a lack of social health is linked to increased Internet usage, leading to PIU. These findings are based on daily conduct rather than hypothetical situation performance, cited as an outcome of social-emotional talents.

- **Self-awareness**

According to the learning theory of PIU, negative self, including such self-esteem and personality, tends to lead certain youths to show maladaptive thoughts and behaviors that lead to negative outcomes. They develop PIU when they become increasingly accustomed to using the Internet as a coping technique over time. As a result, the Internet provides a momentary respite and inspires emotions of autonomy and competencies, allowing them to remove the negative aspects of real life. Meanwhile, low self-awareness contributes to losing control and an addictive mentality, leading to PIU.

- **Relationship skills**

The current assessment of relationship skills concentrated on pupils' social talents at school rather than in general, in both real life and virtual domains. Relationship abilities were found to be negatively connected to PIU, which is consistent with previous research and the cognitive-behavioral system of PIU. Students with low professed connection abilities were more likely to drop lonely in practical and seek emotional support and negative social relief on the Internet. Because of the anonymity of digital contact, they were freer to making new supports in digital contexts.

According to some research, using the Internet can help people feel more socially supported. However, because the current measure primarily asks about kids' interactions at school, they have more overall social support. Because social support from institute and digital contexts differ, adolescents who do not perceive excellent friendships are more inclined to engage in online relationships, resulting in PIU.

PIU levels beyond a certain threshold could be construed as compensatory behaviors for SEL deficiencies. The findings add to the growing body of data suggesting teenage cognitive skills are important etiological variables for PIU, indicating that improving learners' overall SEL competencies can help them avoid PIU.

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Figure 3 Social And Emotional Competencies

3.4 Modified social and emotional competencies scale

The modified scale is divided into five categories: decision-making, social knowledge, self-management, self-knowledge, and social relationships, as shown in Figure 3. PIU had substantial negative relationships with all five SEL abilities and self-management regressing on PIU.

- **Linking ISEIE to schools**

Given that all classroom learning is, at its core, a social activity, the link among social-emotional and intellectual skills is apparent. Collaboration, negotiation, and collaboration are all parts of learning that occur in interactions with classmates, instructions, and other teaching members in various social situations. Individuals who are "sophisticated" in social and emotional competency are more capable of understanding their personal and others' feelings, regulating their feelings well when pressured, making sensible judgments, and effectively traversing difficult circumstances. As a result, capable adolescents are more at home in the classroom than individuals who suffer emotionally and socially. They can concentrate more on their school work. In contrast to these significant long-term academic results, the authors observed that early prosocial talents were linked to fewer psychological problems, less drug use, and less involvement with the justice system in young adulthood.

Overall, incorporating high-quality ISEIE into the school assists instructors in creating a good classroom atmosphere and equips learners with main social-emotional skills that support and help their academic development. Evidence-based ISEIE programming creates a secure, well-structured, and compassionate learning environment with possibilities for positive behavior reinforcement. Students who master critical social and emotional skills can control their emotions and relationships, exhibiting lesser negative and higher positive actions. Learners' attachment to school grows, as does their engagement and commitment to it. These characteristics, when considered together, have a favorable impact on educational learning and help children achieve academic achievement.

In the broader subject of primary preventive science, the value of program characteristics has been examined. Efficient prevention and promotional programs are founded on technical theory and contain research-based contents, structures, and implementations. Programs are disconnected from a theoretical and research background fail. The substance of prevention and promotion activities must be based on research, requiring a thorough

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evaluation of empirical evidence on the specific intervention subject. Furthermore, the activities and, mainly, the framework of preventative and promotion courses must be guided by conceptually sound pedagogical methods. A clear and attainable aim that the teachers have widely agreed upon is also required for successful programs.

The methods through which a program is put into action are referred to as implementation. It is an efficient element of intervention effectiveness because it paints how program delivery should be. High-quality performance of evidence-based ISEIE programming in classrooms is required to accomplish the specific results the ISEIE program seeks. Defined and theory-driven criteria must assist program delivery to achieve high-quality performance. Implementation must also be closely checked, and, if necessary, assistance must be provided.

These results highlight the value of monitoring implementation in technical assessment and encourage classrooms to implement high-quality ISEIE. Ignoring performance can result in a substantial cost in failing to attain the expected goals and incorrectly concluding that a course is useless when poor implementation threatens its efficacy. As a result, a course wanes in a classroom's or an instructor's interest in and professed value. As a result, existing and future kids who could benefit from ISEIE programs miss out.

- **Teacher's role on ISEIE programs**

Instructors are significant advocates for the development of students' social and emotional skills. Furthermore, these same teachers stated that they require substantial assistance from the district and school officials to adapt and develop social and emotional characteristics in classrooms efficiently. These findings are significant because they show that instructors are willing to promote social and emotional competencies, but they also require assistance in putting ISEIE into practice.

Teachers who have a good attitude about ISEIE programs, are driven to provide the course with integrity, and are sure that they have the skills and knowledge to deploy the course properly are more successful. Efforts to increase teachers' ISEIE understanding aren't enough for ISEIE implementation to be successful. Teachers' ISEIE competency and well-being appear to impact ISEIE infusion in classrooms and schools significantly.

Many educators are ill-equipped to apply and comprehend ISEIE courses and practices. Given the latest advances in social-emotional learning, it is more important than ever for instructor education courses to incorporate both the theory and practical level of ISEIE into courses and preservice practical experiences in classrooms. It has a rudimentary understanding of how widespread this is.

Teacher attrition research offers intriguing perceptions into why it is critical to combine ISEIE knowledge and assistances into preservice teacher education, focusing on increasing teachers' and students' personal social and emotional competence and wellness.

4.Simulation analysis

The subjects in this research were 35 student-teachers from schools in China. They were all students seeking a primary teaching and training certification and doing professional practice in elementary schools. It really should be mentioned that this research was conducted as part of the students' Local Cultural Education (LCE) course. The goal of the LCE program was to conserve Conventional activities while also raising awareness of conventional sports as a learning system in elementary schools.

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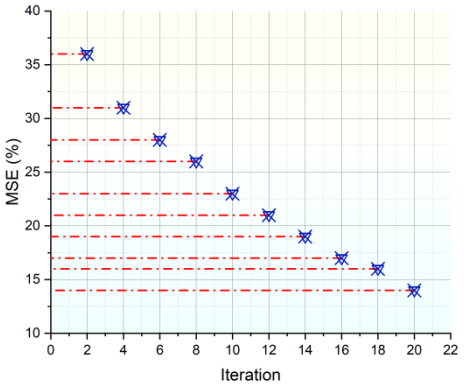

Figure 4(a). Mean squared error analysis of the proposed ISEIE model

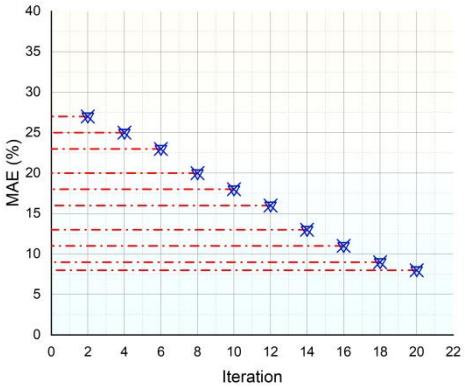

Figure 4(b). Mean absolute error analysis of the proposed ISEIE model

Figures 4(a) and 4(b) show the mean squared error (MSE) and mean absolute error (MAE) analysis of the proposed ISEIE model, respectively. The simulation analysis of the proposed ISEIE model is done by varying the given dataset from a minimum iteration to a maximum iteration level with a step size of 2. As the iteration size increases, the proposed ISEIE model learns the system well and exhibits higher simulation outcomes in lower MSE and MAE. The students and teachers like the effectiveness of the proposed ISEIE model than the existing models.

Table 1. The error analysis of the proposed ISEIE model

Iteration	MSE (%)	MAE (%)
2	36	27
4	31	25
6	28	23
8	26	20
10	23	18

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12	21	16
14	19	13
16	17	11
18	16	9
20	14	8

The error analysis of the proposed ISEIE model is depicted in Table 1. The error of the proposed ISEIE model in terms of mean squared error and mean absolute error are analyzed. The simulation outcomes of the proposed ISEIE model with an integrated education model help the students to learn well in the given classroom environment. The simulation analysis of the proposed ISEIE model is done by considering the different iterations—the proposed ISEIE model exhibits lower error as the iteration size increases.

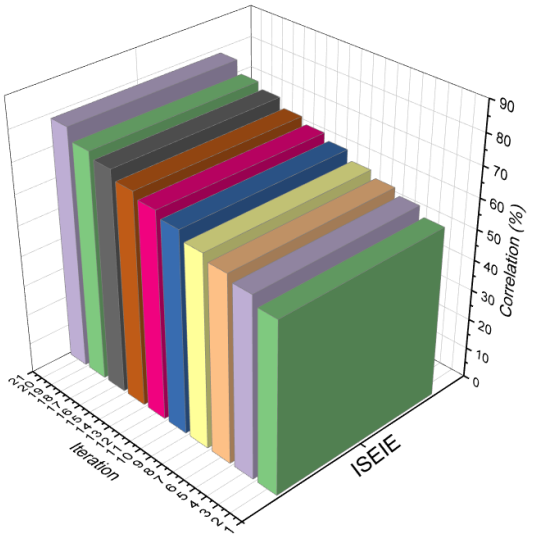

Figure 5(a). Correlation analysis of the proposed ISEIE model

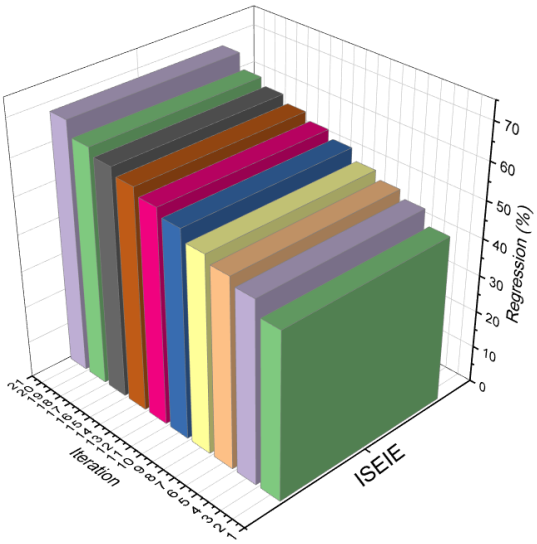

Figure 5(b). Regression analysis of the proposed ISEIE model

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The correlation and regression analysis of the proposed ISEIE model are depicted in Figures 5(a) and 5(b). The simulation outcomes such as correlation and regression of the input and outputs of the given system are monitored and analyzed. The iteration size is incremented from 2 to 20 with a step size of 2. As the iteration size increases, the proposed ISEIE model exhibits higher simulation outcomes in terms of higher correlation and lower regression values. The proposed ISEIE model with an integrated education model helps the teachers to teach well and students to understand well in the given simulation environment.

Table 2. Simulation analysis of the proposed ISEIE model

Iteration	Accuracy (%)	F score (%)
2	68	69
4	71	72
6	73	75
8	75	78
10	78	80
12	80	83
14	82	86
16	85	89
18	89	92
20	91	94

Table 2 indicates the simulation analysis of the proposed ISEIE model. The proposed ISEIE model is analyzed by varying the iteration size from smaller level to higher level with a minimum step size. As the iteration size increases, the proposed ISEIE model enhances the system outcomes with higher accuracy and F score values. The proposed ISEIE model with an integrated education model helps the students to engage well in the simulated classroom and allows the teachers to use information communication tools for the easy teaching-learning process.

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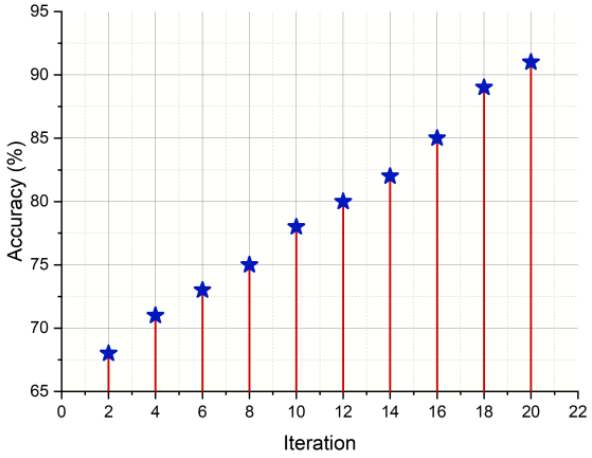

Figure 6(a). Accuracy analysis of the proposed ISEIE model

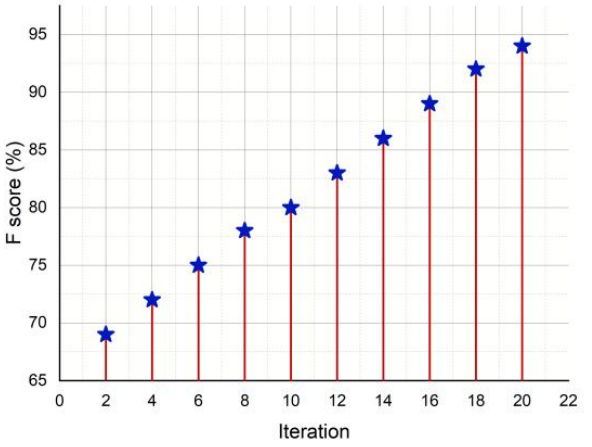

Figure 6(b). F score analysis of the proposed ISEIE model

Figures 6(a) and 6(b) show the accuracy and F score analysis of the proposed ISEIE model, respectively. The proposed ISEIE model is analyzed with the given dataset, and the simulation outcomes in terms of accuracy and F score in the student outcomes are evaluated. The iteration size is increased for better simulation outcomes. As the simulation time increases, the proposed ISEIE model with an integrated education model helps students and teachers better teach. The higher simulation results have occurred at a higher iteration size.

The proposed ISEIE model is analyzed, evaluated, and tested in this section. The simulation outcomes show the effectiveness of the proposed ISEIE model in all the simulation conditions. The proposed ISEIE model exhibits higher simulation outcomes with a higher iteration size.

5.Conclusion and future scope

The purpose of this study was to create a Digital Engagement Model. The model was developed after a thorough analysis of the literature on participation in educational settings. Social engagement, engagement in learning, behavioral engagement, cooperative involvement, and emotion are among the five core characteristics that are essential to successful web-based learning. Signals have been created for each aspect to offer illustrated

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examples of how each involvement component appears. There is still a lot of work to be done to verify the architecture.

Teaching and learning digital is challenging, and it is still figuring out how to assist better students' web-based learning experiences. Educational professionals continue to generate tools and ways to help it overcome the problems of the work. Much can be done to improve teaching and learning results, provide learners the opportunity to engage available on the Internet, and nurture interconnection with one another, teachers, academic facilities, and industry while building stronger subject knowledge interdisciplinary skills. The structure has been intended to provide a template for educators, developers, and academics who operate online. The number of students enrolled in digital education courses must investigate the type and characteristics of participants in future studies.

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