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Designing Inclusive Learning Environments in Vocational Education through the EKEE Learning Model

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Abstract

This study examines the role of the EKEE (Exploration, Creation, Expression, and Evaluation) learning model in designing inclusive learning environments in Indonesian vocational secondary schools. The research is grounded in the need for pedagogical approaches that not only support the development of vocational competencies but also ensure equitable participation, meaningful learning experiences, and holistic human development for students with diverse abilities and learning needs. A qualitative approach with an implementative design was employed in inclusive vocational school classrooms. Data were collected through classroom observations, in-depth interviews with teachers and students, and analyses of learning documentation. The data were subsequently analysed using thematic analysis. The findings indicate that the EKEE learning model effectively supports inclusive learning by embedding flexibility, collaboration, and reflection throughout all stages of the learning process. The exploration stage provides safe and accessible entry points for learning, while the creation stage facilitates differentiated and collaborative learning activities. The expression stage enables diverse and authentic demonstrations of learning outcomes, and the evaluation stage promotes reflective, fair, and process-oriented assessment practices. These integrated stages contribute to increased student engagement, confidence, social interaction, and meaningful participation in learning. The discussion highlights that inclusivity within the EKEE model is operationalized through intentional learning design rather than merely through structural placement. This approach aligns with constructivist, sociocultural, and humanistic learning perspectives. The study concludes that the EKEE learning model offers a flexible and humanistic pedagogical framework for inclusive vocational education, supporting both vocational competency development and holistic learner growth. The model also demonstrates potential for adaptation across various vocational fields to promote equitable and sustainable inclusive learning practices.

Keywords: EKEE learning model; Human development; Inclusive learning environments; Learning inclusion; Vocational education.

1. Introduction

Vocational education plays a strategic role in preparing students to engage productively, meaningfully, and with dignity in both societal life and the labour market [1]. In addition, Vocational education is not only required to produce technically competent graduates, but also expected to develop human potential holistically, including cognitive, social, emotional, and moral aspects [2]. Therefore, the learning environment in vocational education should ideally be designed to be inclusive, adaptive, and equitable in order to accommodate the diversity of students' characteristics, abilities, and their learning needs [3] [4].

An inclusive learning environment positions diversity as a central foundation of the educational process [5] [6]. It is not oriented toward achieving uniform learning outcomes; rather, it emphasizes the provision of equitable access, meaningful participation, and learning opportunities for all students, regardless of their diverse abilities and backgrounds [7]. Within such an environment, students are provided with safe and supportive spaces to explore their potential, express their understanding through diverse modes of representation, and actively participate in meaningful social interactions. From the perspective of human development, this approach underscores that education should uphold human dignity, respect individual differences, and foster the realization of each student's potential [8] [9] [10].

Learning practices in vocational education still present a number of challenges. For example, the learning in vocational secondary schools tends to focus on achieving technical competencies and standardised academic results [11]. This orientation means that the design of the learning environment is often uniform and unresponsive to the diverse needs of students [12]. Therefore, students with different learning styles, special needs, or diverse social backgrounds often experience limitations in participating optimally in the learning process [13] [14]. This condition shows that the implementation of inclusive education at the learning design level has not been fully realised systematically, even though it has become an important agenda in the education system in terms of policy [8] [11] [12].

A number of previous studies have shown that an inclusive learning environment contributes positively to student learning engagement, social interaction, and affective development [15]. The results of these studies reveal that flexible, learner-centred learning design, that is the learning engagement, can increase the sense of security, participation, and confidence of learners with diverse learning needs [16]. These findings confirm that inclusivity in learning is not only related to the placement of learners in one classroom, but also to how the learning process is designed and implemented.

Other studies focusing on vocational education show that learning that places too much emphasis on technical competency standards has the potential to neglect the social and emotional aspects of students [17]. These studies, therefore, emphasise that vocational education students require a learning approach that supports the development of self-identity, communication skills, cooperation, and self-confidence [18]. A learning environment that is not inclusive tends to limit students' opportunities to actively participate and express their full potential, making learning less meaningful for some students [19] [20].

Studies on creative and reflective activity-based learning models also show that learning stages that provide space for exploration, creation, and expression can increase engagement and meaningfulness in learning [21]. These studies emphasise the importance of early experiences in understanding the material, developing ideas independently and collaboratively, and providing various forms of representation of learning outcomes [22]. Reflective evaluation is considered fairer and better able to appreciate the learning process of students than assessments that are solely oriented towards the final outcome [23].

However, most previous studies still examine inclusive learning and learning models separately [24]. Research that specifically integrates certain learning models as a framework for designing inclusive learning environments in vocational education is still relatively limited [25]. Studies that explicitly place human development orientation as the main foundation in the design of inclusive learning environments are also not widely available [26].

The gap above indicates the need for a pedagogical framework, both conceptually coherent and practically adaptive to ensuring dignity, participation, and meaningful learning for all vocational students. Responding to this need, the EKEE (Exploration, Creation, Expression, and Evaluation) learning model is proposed as a framework for designing inclusive learning environments in vocational education. The model emphasizes exploration as a safe entry point for learning, creation as a space for valuing diversity through collaboration, expression as recognition of multiple ways of demonstrating learning outcomes, and evaluation as a reflective and fair assessment process.

Accordingly, this study aims to examine how the EKEE learning model can function as a conceptual and pedagogical framework for designing inclusive learning environments in vocational education. The study investigates the extent to which the model supports learning processes that accommodate diverse learner characteristics, promote equitable participation, and foster meaningful engagement among students. By addressing this objective, the study is expected to contribute theoretically to the growing body of scholarship on inclusive learning design grounded in humanistic educational perspectives, while also offering practical insights for the development of pedagogical strategies that enhance equitable, accessible, and meaningful learning opportunities for all students within vocational education contexts.

2. Methods

2.1 Research Design

This study employed a qualitative approach with an implementative design to gain an in-depth understanding of how the EKEE (Exploration, Creation, Expression, and Evaluation) learning model functions in designing inclusive learning environments oriented toward human development in vocational education. The implementative design enabled the researchers to examine the learning process contextually, analyse classroom interaction dynamics, and explore the lived learning experiences of teachers and students during the application of the EKEE model. The conceptual framework of the EKEE learning cycle is presented in Figure 1.

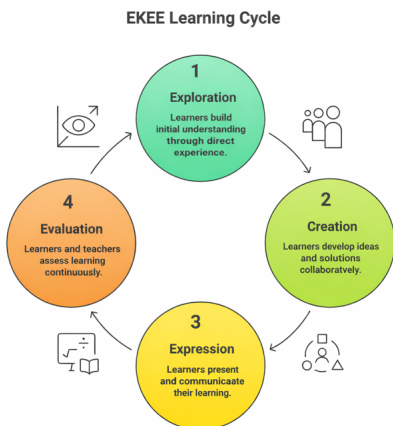


Figure 1. EKEE Learning Cycle

2.2 Research Setting and Participants

The study was conducted in an inclusive vocational secondary school in Indonesia. Participants consisted of four vocational teachers and thirty-two students who were directly involved in EKEE-based learning activities. The teachers represented different vocational fields and had prior experience teaching in inclusive classrooms. The student participants reflected diverse learning characteristics, including variations in academic ability, learning styles, and learning needs.

Participants were selected using purposive sampling based on their active participation in inclusive learning practices and willingness to engage in the research process. This sampling strategy enabled the researchers to capture rich and relevant data aligned with the study's objectives.

2.3 Duration of Implementation

The implementation of the EKEE learning model was conducted over eight weeks, encompassing sixteen classroom sessions (two lessons per week). Each session integrated the four stages of the EKEE learning cycle, with flexibility in emphasis depending on lesson objectives and learner needs. This duration allowed sufficient time to observe recurring learning patterns, interaction dynamics, and changes in learner engagement and participation.

2.4 Data Collection Techniques

Data were collected using multiple qualitative techniques to ensure data richness and triangulation. Classroom observations were conducted throughout the implementation period to document learning activities, teacher facilitation strategies, and student interactions across the EKEE stages. In-depth semi-structured interviews were carried out with all participating teachers and a subset of students to explore their perceptions, experiences, and reflections on the learning process. In addition, document analysis was used to examine lesson plans, reflection notes, assessment records, and student learning artefacts generated during EKEE-based learning activities.

2.5 Data Analysis

Data were analysed using thematic analysis following an iterative and systematic process. The analysis involved data familiarization, initial coding, theme development, and interpretation in relation to the research focus. Initial codes were generated inductively from observation notes, interview transcripts, and documentation.

Examples of initial codes included *flexible learning entry*, *peer collaboration*, *multiple modes of expression*, *learner confidence*, and *reflective assessment*. These codes were subsequently clustered into broader themes, such as *accessibility of learning*, *collaborative participation*, *diversity of learning expression*, and *inclusive assessment practices*.

Theme validation was conducted through repeated data comparison across sources, peer discussion among the researchers, and member checking with teacher participants to ensure that the themes accurately reflected their classroom experiences. This process enhanced the credibility and consistency of the findings. An overview of the thematic analysis cycle is presented in Figure 2.

2.6 Trustworthiness of the Study

To ensure trustworthiness, several strategies were employed. Methodological triangulation was applied by comparing data from observations, interviews, and document analysis. Member checking was conducted by sharing preliminary interpretations with participating teachers to confirm the accuracy of the findings. Reflexive journaling was also used throughout the research process to minimize researcher bias and strengthen analytical rigor.

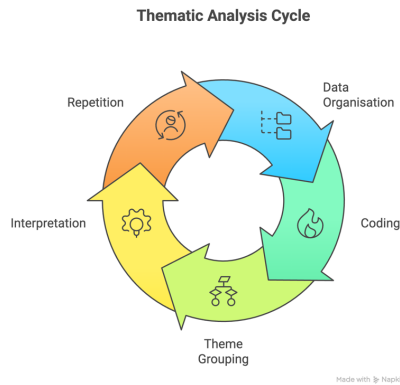


Figure 2. Thematic Analysis Cycle

2.7 Ethical Considerations

This study adhered to established ethical research principles. All participants were informed about the research objectives, procedures, and voluntary nature of participation prior to data collection. Informed consent was obtained from all participants, and confidentiality was maintained by anonymizing participant identities. The collected data were used solely for academic and scientific purposes.

This study employs a descriptive qualitative approach, as it seeks to obtain a comprehensive understanding of the meanings, values, and implementation of a love-based curriculum from the perspective of spiritual and character education at Darussalam Simpang Limun Bangai Private Islamic Senior High School, Torgamba District, South Labuhanbatu Regency. This approach enables the researcher to examine holistically the experiences and perspectives of teachers, the madrasah principal, and students in integrating the values of compassion, empathy, and spirituality into the teaching and learning process [[miles_qualitative_2014](#), [moleong_metodologi_2019](#)]. This research was conducted in the field by involving purposively selected informants, including madrasah principals, Islamic Religious Education (PAI) and Character Building teachers, general subject teachers, and students, until reaching the point of data saturation. This study involved a number of purposively selected participants, consisting of 10 teachers (6 Islamic Religious Education teachers and 4 general subject teachers), 30 students consisting of 15 male students and 15 female students, and 2 administrators, namely the Principal and the Deputy Principal of Curriculum. The duration of data collection lasted for 3 months, from January to March 2025, which included in-depth interviews, participatory observation, and documentation studies. Data collection was carried out through direct observation of learning activities and teacher-student interactions in the classroom, as well as a review of curriculum documents used in the madrasah.

Data collection techniques were carried out through in-depth interviews, participatory observation, and documentation studies. The collected data were then analyzed using open, axial, and thematic coding processes, adapting the interactive data analysis model from Miles, Huberman, and Saldana [[miles_qualitative_2014](#)]. In the open coding stage, researchers read and examined the data obtained to identify initial categories covering the values of love, spirituality, and character in the curriculum. Then, in axial coding, these categories were connected and grouped to understand the relationships between existing themes, such as the role of teachers, love-based teaching methods, and challenges in implementing a love-based curriculum. The final stage was thematic coding, where the main themes that emerged, such as "the influence of teachers as role models," "implementation of spiritual values in the curriculum," and "challenges in integrating character in learning" were further

processed to produce findings that answered the research questions.

Data validity testing was carried out by triangulating sources, techniques, and time to ensure the validity of the findings [miles_qualitative_2014]. This research adheres to ethical scientific principles such as maintaining informant confidentiality, academic honesty, and informed consent. This method is relevant because it can uncover dimensions of meaning and spiritual values in educational practices that cannot be measured quantitatively [bungin_penelitian_2019] [moleong_metodologi_2019] [sugiyono_metode_2022].

3. Results and Discussion

3.1 Results

3.1.1 Implementation of the EKEE Learning Model

The findings of this study indicate that the EKEE (Exploration, Creation, Expression, and Evaluation) learning model was implemented as a structured learning cycle within inclusive vocational classrooms. Data obtained from classroom observations, interviews, and learning documentation demonstrate that the four stages of the EKEE model were systematically applied across learning sessions, forming an integrated instructional sequence. Each stage involved active student participation, engagement with learning resources, collaborative interaction, and reflective activities that supported the continuity of the learning process.

Observation data further reveal that classroom learning processes were organized in ways that enabled students with diverse abilities, learning styles, and learning needs to participate meaningfully in learning activities. Teachers facilitated the learning environment by adapting instructional strategies and learning tasks in accordance with classroom conditions and the varied characteristics of learners. Such adjustments contributed to the development of a more inclusive and responsive learning environment.

At the exploration stage, findings indicate that this initial phase provided learners with a safe and accessible space to develop preliminary understanding through direct experiences and interactions with diverse learning resources. Classroom observations show that students from varied backgrounds and ability levels were able to engage with the learning materials in ways that reflected their prior experiences and existing knowledge structures. Through these exploratory activities, learners gradually constructed new knowledge through meaningful experiences, illustrating the practical application of constructivist learning principles in the classroom.

The creation stage emphasized the development of ideas, creativity, and problem-solving processes, both individually and collaboratively. The findings suggest that learners were encouraged to produce original work, solutions, or learning artefacts through flexible and differentiated tasks. Collaborative learning activities facilitated social interaction and knowledge sharing, enabling learners to learn from one another and develop their potential through cooperative engagement. During this stage, teachers played a critical role in providing appropriate scaffolding to support learners according to their individual needs and learning progress.

At the expression stage, learners were provided with opportunities to communicate and demonstrate their learning outcomes through multiple forms of representation. Students expressed their understanding through oral presentations, practical demonstrations, visual outputs, and written products. This diversity of expression allowed learners to demonstrate their competencies authentically in accordance with their individual strengths and learning preferences. The findings indicate that this stage contributed to increased learner confidence, active participation, and deeper engagement within the inclusive learning environment.

The evaluation stage functioned as a reflective process aimed at assessing learning in terms of both processes and outcomes. The results indicate that evaluation was conducted continuously through formative feedback, self-reflection, and evaluative discussions between teachers and learners. This comprehensive approach enabled both parties to monitor learning progress and to make adaptive improvements to subsequent instructional activities.

Overall, the findings suggest that the EKEE learning model provides a flexible and humanistic pedagogical framework for designing inclusive learning environments in vocational education. The integration of the four learning stages supported active engagement, equitable participation, and the holistic development of learners' potential. Based on these findings, an inclusive learning design framework was formulated through the systematic application of the EKEE learning model.

EKEE Learning Model: Inclusive Pedagogical Framework

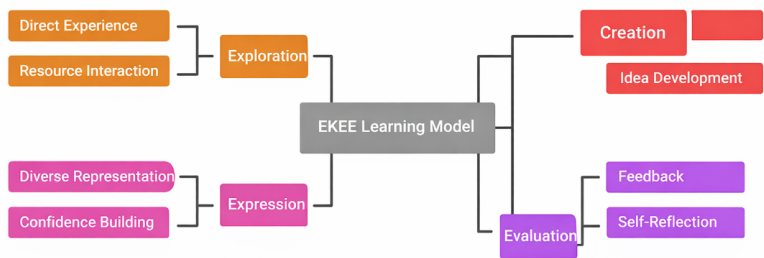


Figure 3. EKEE Learning Model in Inclusive Pedagogical Framework

3.1.2 Inclusive Learning Design Based on the EKEE Learning Model in Vocational Education

Learning Context

This learning design is implemented in an inclusive vocational school classroom comprising students with diverse academic abilities, learning styles, social backgrounds, and learning needs. The learning process is directed not only toward achieving vocational competencies but also toward ensuring equal participation, active engagement, and meaningful learning experiences for all students. The EKEE learning model serves as the primary pedagogical framework because of its flexible, collaborative, and humanistic characteristics.

Stage 1: Exploration

Inclusive objective : Ensuring equal access and providing a safe learning entry point for all learners.

The results indicate that, at the exploration stage, teachers designed learning activities that enabled all learners to build initial understanding through direct experience and interaction with various learning resources. Contextual problems relevant to vocational fields, such as workplace scenarios, simple simulations, and observations of tools, products, and processes, were introduced.

Learners explored learning materials through multiple formats, including videos, images, demon-

strations, short readings, and guided discussions. This approach accommodated learners with diverse literacy levels, cognitive abilities, and special learning needs. Teachers acted as facilitators by providing initial guidance without imposing uniform learning outcomes, thereby creating a safe and inclusive learning environment.

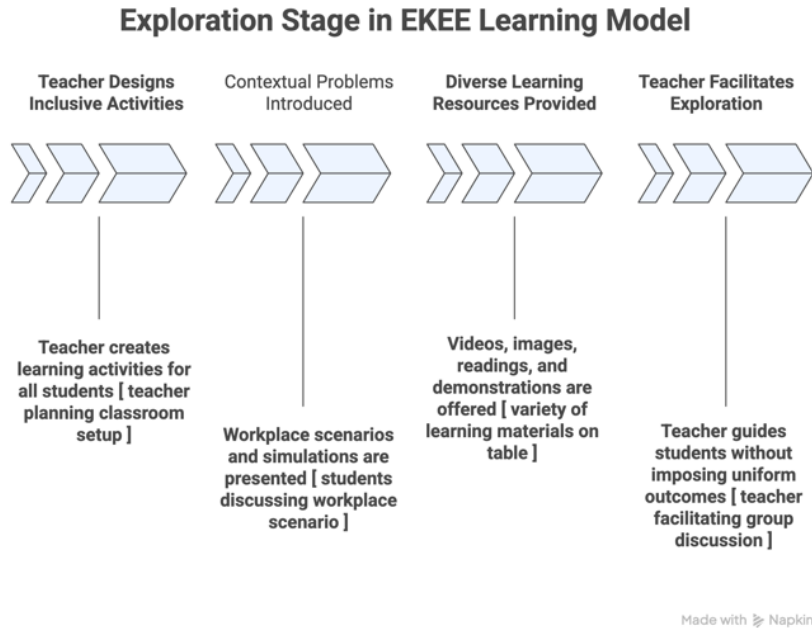


Figure 4. Exploration Stage in EKEE Learning Model

Stage 2: Creation

Inclusive objective: Accommodating differentiation and promoting collaborative learning. The results show that, during the creation stage, learners developed ideas, solutions, or products based on the outcomes of exploration activities. Furthermore teachers designed open-ended, project-based tasks that allowed learners to choose working methods aligned with their interests and abilities. Learners worked individually or in heterogeneous groups, which encouraged peer learning and mutual support.

Collaboration played a crucial role in supporting inclusive learning. For example, learners with stronger academic skills supported their peers, while others contributed through creativity, practical skills, or contextual insights. Teachers provided differentiated scaffolding through guidance, examples, and step-by-step support. These practices supported both cognitive development and social interaction within inclusive classroom settings.

Stage 3: Expression

Inclusive objective: Valuing diverse ways of demonstrating learning outcomes. The results indicate that the expression stage provided learners with opportunities to present and communicate learning outcomes through multiple forms of representation. Learners chose to express their work through oral presentations, practical demonstrations, visual posters, short videos, or simplified written reports.

This flexible approach reduced reliance on a single assessment mode. Learners with verbal limita-

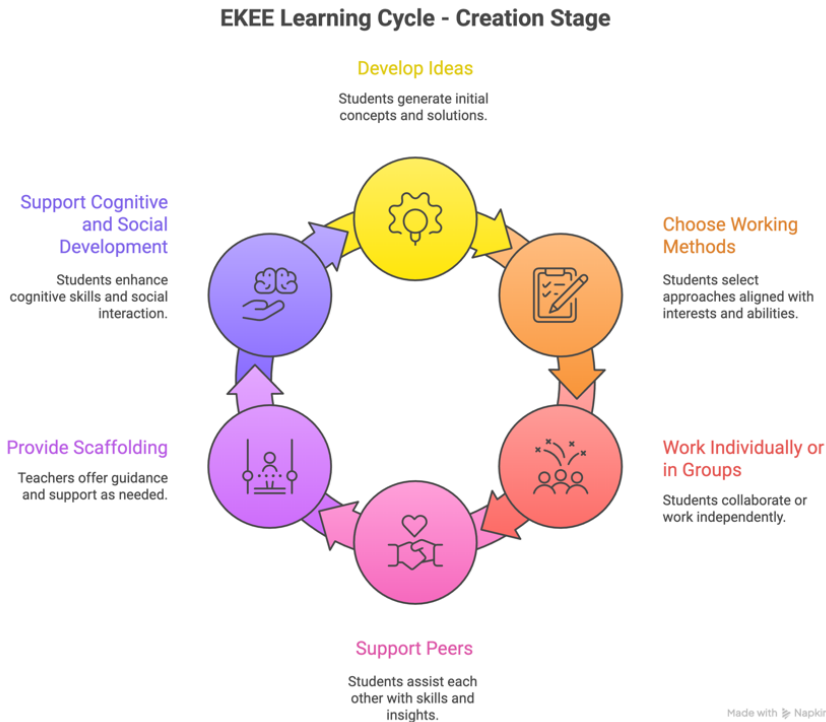


Figure 5. EKEE Learning Cycle in Creation Stage

tions were able to demonstrate understanding through visual or performance-based outputs. Constructive feedback from teachers and peers reinforced learning and strengthened learner confidence. Expression functioned not only as an assessment stage but also as a space for recognition, participation, and affirmation of learner diversity.

Stage 4: Evaluation

Inclusive objective: Conducting fair, reflective, and process-oriented assessment. The results show that evaluation within the EKEE learning model was continuous and reflective. Assessment focused on learning processes and outcomes, including learner engagement, collaboration, effort, and individual progress. Evaluation methods included self-reflection, group discussions, teacher feedback, and documentation of learner work.

This approach reduced competitive pressure and supported learners in understanding their strengths and areas for improvement. Evaluation outcomes were used to inform subsequent learning activities, making the learning process adaptive and sustainable. Evaluation thus functioned as an integral part of learning rather than as a final judgment.

Principles of Inclusivity at Each Stage of the EKEE Learning Model

The results indicate that inclusivity was embedded across all four stages of the EKEE learning model to ensure that every learner, regardless of ability, background, or learning needs, had equal access to meaningful learning experiences. At the exploration stage, inclusivity was reflected in the provision of multiple entry points to learning. At the creation stage, inclusivity was supported through flexible task design and collaborative work that valued diverse contributions. The expression stage respected multiple ways of demonstrating learning outcomes, while the evaluation stage applied

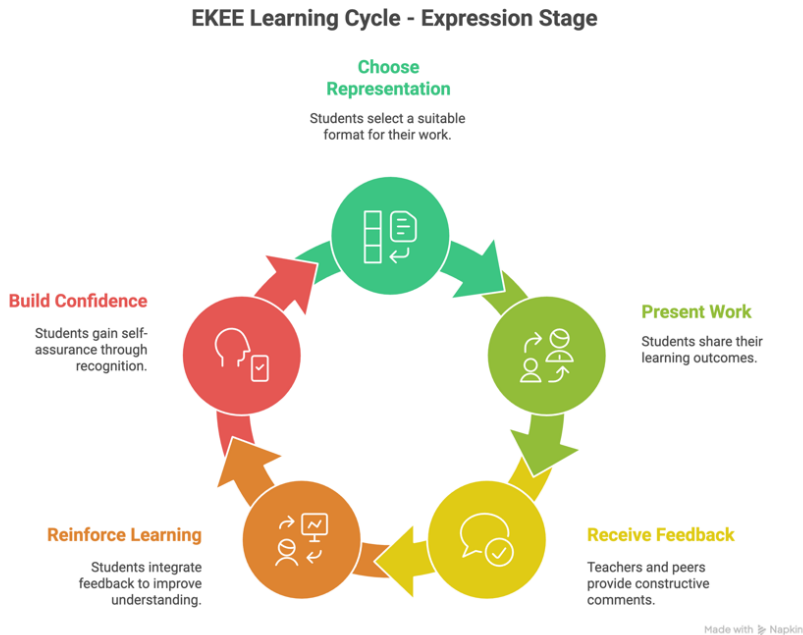


Figure 6. EKEE Learning Cycle in Ekspression Stage

fair, reflective, and process-oriented assessment practices. Together, these principles shifted inclusive learning from mere physical placement in a classroom toward intentional pedagogical design that promoted participation, equity, and dignity for all learners.

The Role of Teachers in Inclusive Learning Based on the EKEE Model

The results show that, in EKEE-based inclusive learning, teachers functioned primarily as facilitators, mediators, and learning designers rather than as sole knowledge transmitters. Teachers created safe learning environments, provided differentiated scaffolding, supported collaboration, valued diverse forms of expression, and implemented reflective assessment practices. This role required teachers to be responsive to learner diversity and to continuously adapt instructional strategies to sustain inclusive learning environments.

Differentiated Learning at the Exploration and Creation Stages

The results indicate that differentiation was a key feature of inclusive learning in the EKEE model, particularly at the exploration and creation stages. Differentiation was implemented through multiple learning formats, flexible learning paths, and open-ended project tasks. Heterogeneous group work enabled learners to support one another and contribute according to their strengths.

Inclusive Assessment Strategies at the Evaluation Stage The results show that assessment in the EKEE learning model was inclusive by design and focused on learning processes and outcomes. Teachers employed formative and reflective assessment strategies, including self-reflection, peer feedback, observation, and performance-based assessment. Assessment criteria emphasised individual progress, effort, collaboration, and problem-solving skills rather than comparison among learners.

Practical Examples of EKEE Implementation in Vocational School Classrooms The results further demonstrate that the EKEE learning model was adaptable across vocational fields, including

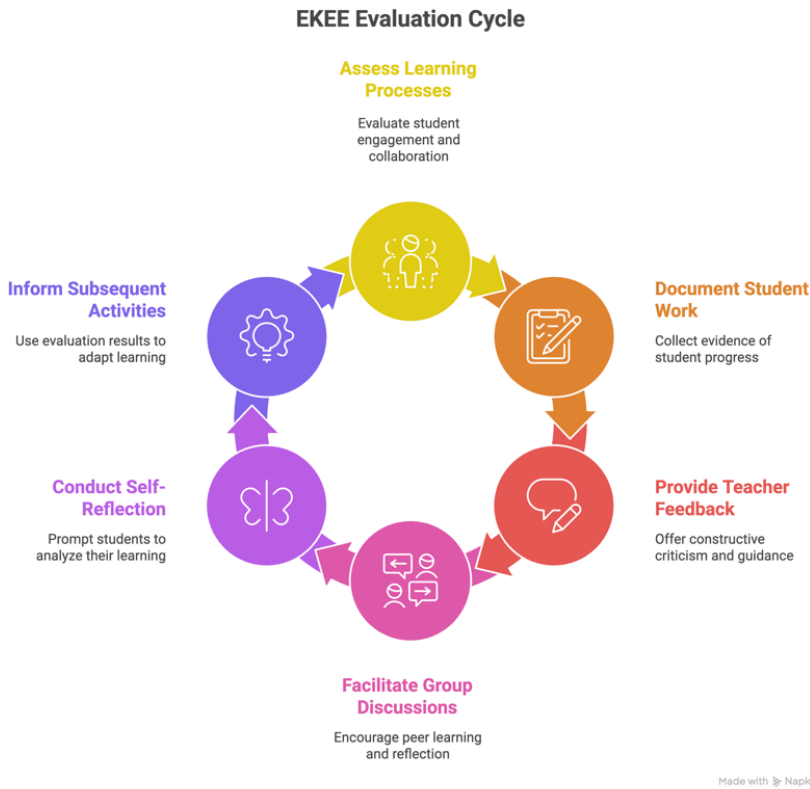


Figure 7. EKEE Learning Cycle in Ekspresion Stage

Computer and Network Engineering (TKJ), Office Management and Business Services (OTKP), Accounting and Financial Management (AKL), and Culinary Arts (Tata Boga). Across these contexts, EKEE supported inclusive participation, collaborative learning, and meaningful assessment aligned with vocational competencies.

3.2 Discussion

The findings of this study indicate that the EKEE (Exploration, Creation, Expression, and Evaluation) learning model operates as an inclusive pedagogical framework by integrating experiential, collaborative, and reflective learning processes within vocational education. Rather than functioning as discrete instructional phases, the four stages of the EKEE model form a continuous learning cycle that supports learner engagement and participation across diverse ability levels. This integrated design is consistent with research highlighting the effectiveness of project-based and collaborative learning approaches in fostering inclusive learning environments [27].

At the initial stage, exploration activities provided learners with multiple entry points to engage with learning content through contextual vocational problems and diverse learning resources. Such practices align with constructivist perspectives, which emphasize knowledge construction through interaction with prior experiences and authentic contexts [28] [29]. The use of varied instructional formats, including visual media, demonstrations, and guided discussions, enhanced accessibility and accommodated different learning styles, supporting previous findings on inclusive instructional de-

sign in vocational settings [30] [31].

As learning progressed, the creation stage enabled learners to engage in open-ended and collaborative tasks that supported differentiated participation. In this condition, working in heterogeneous groups allowed students to contribute according to their strengths, while peer interaction and teacher scaffolding facilitated shared problem-solving and social learning. These findings align with sociocultural learning theories that highlight collaboration and guided participation as central mechanisms in facilitating inclusive and socially mediated learning processes. [29] [32].

The expression stage further reinforced inclusivity by providing multiple modes for demonstrating learning outcomes. Allowing learners to choose how they represented their understanding reduced dependence on standardized assessment formats and enabled more authentic demonstrations of competence. Constructive feedback during this stage supported learner confidence and engagement, aligning with humanistic and learner-centred approaches that value recognition and agency in learning [31] [33].

Finally, the evaluation stage functioned as a reflective and formative process integrated throughout the learning cycle. By emphasizing self-reflection, feedback, and individual progress, assessment practices shifted away from competitive comparison toward process-oriented evaluation. This approach supports prior research advocating fair and inclusive assessment practices that recognize diverse learning trajectories [34] [35].

Overall, the EKEE learning model demonstrates how inclusivity in vocational education can be operationalized through intentional pedagogical design rather than structural placement alone. By embedding flexibility, collaboration, expressive diversity, and reflective assessment within a coherent learning cycle, the model aligns with contemporary educational priorities that emphasize equity, human development, and meaningful learner engagement [36] [37] [38].

4. Conclusion

This study concludes that the EKEE (Exploration, Creation, Expression, and Evaluation) learning model provides a flexible and effective pedagogical framework for designing inclusive learning environments in vocational education. By integrating experiential exploration, collaborative creation, diverse forms of expression, and reflective evaluation, the model supports equitable participation and holistic learner development without compromising vocational competencies.

The findings also suggest that professional development programs for vocational teachers should emphasize inclusive instructional design using flexible learning models such as EKEE, strengthening teachers' roles as facilitators and learning designers. At the policy level, vocational education frameworks should support adaptable pedagogical models, inclusive assessment practices, and sustained teacher development to promote equitable learning opportunities. Future research is recommended to examine the long-term impact of the EKEE model across vocational contexts and its integration with digital learning environments.

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