

# Inclusive Practices in Hands-On Learning Environment: Addressing The Needs of Diverse Learners

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**Abstract**— This study determined the strategies of public-school teachers to promote positive and inclusive teaching and learning environment to address the needs of diverse learners. This study used qualitative research design through phenomenology approach to investigate the complexities and nuances of the teachers capturing their challenges and experiences in facing the diverse learners in the classroom. Utilizing semi-structured interviews, the study embraced phenomenology to capture the essence of teachers' experiences and perceptions. Findings indicated that hands-on learning environments effectively promoted inclusive practices, yet educators faced challenges including lack of confidence, difficulty in creating individualized activities, and limited time resources. Collaboration with colleagues and the use of technology were reported as strategies to overcome these challenges. To meet diverse learners' needs, teachers implemented differentiated instruction strategies, such as remediation classes and tailored learning activities. Furthermore, the study highlighted the importance of localizing and contextualizing learning materials to reduce barriers to learning and foster a sense of community among students. Extrinsic motivation methods, such as social recognition and rewards, were found to encourage active participation regardless of background and ability. Integration of interactive games was also noted to enhance understanding of complex concepts and foster critical thinking skills. In conclusion, the researchers recommend that there should be an assurance of the policies integrated into the organizational or community framework, continuous learning and awareness of different cultures, abilities, and perspective among teachers and to adjust facilities and to provide mentorship programs and counselling services that leads to more equitable and supportive environment.

**Keywords**— inclusivity, approaches, methodologies, hands-on learning, flexible environment.

## I. INTRODUCTION

In the realm of education, the pursuit of inclusivity is foremost, striving to create environments where every learner, regardless of background or ability, feels valued, respected and capable of thriving. According to the National Association for Education of Young Children and Division of Young Early Childhood (DEC/NAEYC, 2009, p.1) inclusion embodies the values, policies, and practices to support the right of every child and his or her family, regardless of ability, to participate in the broad range of activities. The defining features of inclusion that can be used to identify high quality early childhood programs and services are access, participation, and supports. Hands-on learning environments, characterized by active engagement and experiential learning, offer unique opportunities to implement inclusive practices. With the goal to meet the

educational demands of a variety of learners, inclusive practices in classrooms involve creating accessible learning spaces that can be utilized by students of various abilities, backgrounds, and learning preferences. This calls for the availability of resources, professional development, and monitoring and evaluation systems, Akbar et.al. (2023).

The introduction of hands-on practices in Philippine education, particularly in addressing the needs of diverse learners, can be traced back to the early 20th century. "The Filipino Teacher", a publication by the Philippine Teachers' Association, highlighted issues such as overcrowded classrooms, indicating a need for more interactive and personalized teaching methods. However, a study by Mesa (2006) suggests that

traditional teaching methods were still prevalent in the early 2000s, indicating a slow shift towards hands-on practices.

Throughout the years, inclusive practices in hands-on environments have been critical for addressing the needs of diverse learners in education. Safe, supportive, and equitable learning environments are essential for ensuring all students feel included and valued. Tinto (2006) emphasized that collaborative learning and inclusive institutional environments are key factors of students' success.

A research project by Nunez, M. R., & Rosales, S. (n.d.) aimed to find out how Filipino high school teachers feel about inclusive education in the Philippines. Findings showed that although teachers have limited training regarding inclusive education, they remain to have favorable perceptions and attitudes towards it. However, positive perceptions and attitudes towards inclusive education are not enough. Successful implementation calls for proper training for teachers, which could be achieved if and only if the government would take action. Possible training must include communication with learners with disabilities, effective teaching methods and strategies, and adaptation of materials for teaching students with educational needs (SEN). This study revealed that classroom teachers have not yet had enough training to teach and that they are not well-equipped to handle students with SEN. Thus, a call for the inclusive programs recommended in the teaching curriculum is needed to provide adequate training for would-be teachers to be ready for inclusive teaching in the field.

Children with special learning disabilities exhibit a disorder in one or more of the basic, psychological processes involved in understanding or in using spoken or written languages. These may be manifested in disorders of listening, thinking, talking, reading, writing, spelling, or arithmetic. They include conditions which have been referred to as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, developmental aphasia, etc. They do not include learning problems which are due primarily to visual, hearing, or motor handicaps, to mental retardation, emotional disturbance, or to environmental disadvantage (Special Education for Handicapped Children, 1968).

A study conducted by Dioso, Iglesia and Ramiro (2022) concluded that teachers' readiness for inclusive special education was established with the provided in-service training for professional development. However, further training in handling students with special needs in an inclusive setting should be given emphasis. Additional special education support, opportunities, and resources are needed to increase the level of teachers' readiness for inclusive special education. The Department of Education may continue to act in the full implementation of inclusive special education in all schools with the SPED Center implementing full action in the call for inclusive special education.

Encoben (2019) asserts that public school teachers in the Department of Education have not fully embraced inclusive education. Teachers were more aware of the need for updated special education training that would equip them to handle pupils' behavior and would provide them with teaching strategies in imparting lessons to mainstream pupils. Teachers were favorable to inclusive education. However, they need to be exposed to training, seminars, and workshops. They were favorable in collaborating with administrators, special education teachers, and mainstream teachers. Teachers were having difficulty collaborating with the special education teachers since the latter did not monitor or evaluate the progress of the mainstream pupils. However, the teachers are prepared and willing to work with children with disabilities. Teachers were skilled on a personal level. However, teachers needed teaching strategies for handling the mainstream pupils. The age of the teacher is the predictor of the success of inclusive education. It could be because of the experience they had with the pupils with special needs.

Moreover, culturally responsive teaching is another effective approach to fostering inclusivity in the classroom, as stated by Ladson-Billings (2021). By incorporating strategies that cater to diverse student backgrounds, educators can create a more inclusive learning environment that meets the needs of all learners. Individualized services and supports are essential in addressing the unique needs of students with disabilities and difficulties. Additionally, accommodations play a crucial role in addressing barriers to learning for diverse students. By providing adaptations or changes in educational environments and practices, educators can help students overcome challenges and access the curriculum effectively.

In conclusion, promoting equality in education requires creating efficient teaching and learning environments that cater to the different needs of students. Educators must ensure that each learner feels appreciated, encouraged, and included in the learning process by employing comprehensive methods, especially in hands-on environments. For all students to have a positive and inclusive educational experience, it is still imperative to address the unique needs of diverse learners. This approach is in line with current educational trends and is supported by the integration of inclusive practices in curriculum planning and tracking in the Result-Based Performance Management System (RPMS) too which enhance teachers' performance and teaching.

## II. THEORETICAL AND CONCEPTUAL FRAMEWORK

The philosophy of inclusive teaching strives to create a learning environment that have equal access to learning regardless of their background and needs. The theoretical perspective that supports these practices are as follows:

Social constructivism, based on the work of Vygotsky, highlights the significance of social interactions and cultural contexts in the learning process. Vygotsky's concept of Zone of Proximal Development (ZPD), as outlined in his work "Mind in Society: The Development of Higher Psychological Processes" (1978), emphasizes the difference between what learners can achieve independently and what they can accomplish with guidance. Additionally, the concept of scaffolding, where teachers or peers provide support to help learners accomplish tasks within their ZPD, is an integral component of social constructivism. By integrating these concepts into pedagogical practices, educators can promote collaborative learning environments that consider the social and cultural aspects of knowledge construction.

Universal Design for Learning (UDL) is a comprehensive educational framework rooted in cognitive neuroscience research. According to Meyer, Rose, and Gordon (2014), UDL aims to develop adaptable learning environments that accommodate individual learning differences. The framework is guided by three essential principles. The first principle emphasizes providing multiple means of representation, allowing information to be presented in various formats to support diverse learning styles. The second principle

encourages the provision of multiple means of action and expression, enabling students to demonstrate their understanding through diverse methods. Finally, UDL promotes multiple means of engagement by tapping into learners' interests, offering appropriate challenges, and increasing motivation. By adhering to these principles, educators can create inclusive classrooms that support the diverse needs of all learners.

Culturally responsive teaching is another approach to promoting inclusion in the classroom (Gay, 2010). By recognizing and valuing the diverse cultural backgrounds, experiences, and perspectives that students bring to the classroom, teachers can create a supportive and inclusive learning environment. Incorporating culturally relevant content, teaching strategies, and assessment practices can validate and respect the diverse identities and experiences of all students, promoting a sense of belonging and enhancing student engagement.

Critical pedagogy, developed by Paulo Freire, advocates for transformative education that empowers students to challenge oppressive structures. Freire's concept of problem-posing education and the dialogical method, as presented in "Pedagogy of the Oppressed" (2000), encourages learners to question, reflect, and engage in critical dialogue. Through these approaches, students are empowered to critically examine their realities and become active participants in their own learning experiences.

In today's diverse classrooms, it is crucial for educators to employ strategies that cater to the individual needs of all students. Four key strategies that have been identified to address the needs of diverse learners are culturally responsive teaching, differentiated instruction, multisensory learning, and inclusive pedagogy.

In the realm of differentiated instruction, educators tailor their teaching to meet individual needs through content differentiation, process differentiation, and product differentiation (Tomlinson, 2017). Content differentiation involves varying what is taught, process differentiation involves varying how students engage with the content, and product differentiation involves varying how students demonstrate their learning. This approach allows educators to address the diverse learning needs present in their classrooms.



Multisensory learning, as outlined by Sousa (2016), involves engaging multiple senses to enhance learning. Educators can utilize visual aids, hands-on activities, and auditory materials to support diverse learning styles, ensuring that students have opportunities to learn and demonstrate understanding using a variety of sensory modalities.

Inclusive pedagogy, as proposed by Florian and Black-Hawkins (2011), is an approach that considers diversity as an asset and seeks to create learning opportunities that are accessible to all students. This approach involves implementing strategies such as collaborative learning and the use of adaptive technologies. Collaborative learning encourages group work and peer support, fostering an inclusive classroom community. Additionally, the use of adaptive technologies ensures that tools and resources cater to various needs, making learning accessible to all students.

Hands-on learning environments provide excellent opportunities for students to engage in active learning and develop real-world problem-solving skills. Three key approaches to hands-on learning are project-based learning (PBL), service-learning, and maker education, each with its own theoretical framework and inclusive practices.

Project-Based Learning (PBL) is a teaching method that engages students in solving real-world problems through collaborative projects. It involves providing varied entry points and tasks to accommodate different strengths and interests among students. Additionally, it focuses on ensuring that projects are culturally relevant and engaging for all students (Larmer, Mergendoller, & Boss, 2015).

Service-learning integrates community service with instruction and reflection to enrich learning. Inclusive practices in service-learning involve engaging students in meaningful service activities that address community needs and reflecting on the service experience to deepen understanding and foster civic responsibility (Jacoby, 2015).

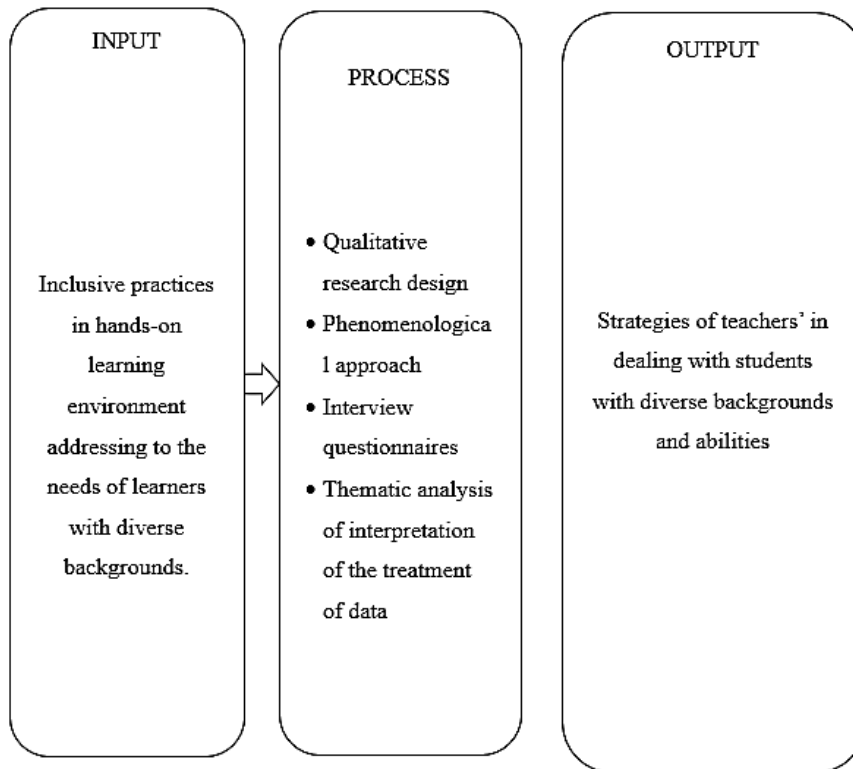
Maker education emphasizes hands-on learning through designing, creating, and building. Inclusive practices in maker education include providing accessible maker spaces and materials for all students, as well as encouraging creativity and innovation while recognizing

diverse ways of thinking and problem-solving (Martin, 2015).

Inclusive practices in hands-on learning environments require a multifaceted approach that integrates various educational theories and strategies. By applying principles of UDL, social constructivism, critical pedagogy, culturally responsive teaching, differentiated instruction, multisensory learning, and inclusive pedagogy, educators can create learning experiences that address the needs of diverse learners. Implementing project-based learning, service-learning, and maker education further supports the goal of inclusivity by providing engaging and meaningful opportunities for all students. Collaboration and support systems are also essential for teachers to effectively address the challenges of promoting inclusion (Friend & Cook, 2019). Our research suggests that working with colleagues, administrators, and support staff can provide valuable insights, resources, and strategies to improve inclusive practices. Professional development and ongoing assistance can also empower teachers to continuously enhance their inclusive teaching skills, including understanding how to use technology to support students' learning and how to create a positive and inclusive classroom culture.

### *Paradigm of the study*

The paradigm of the study shows the interconnection of the variables used namely, the input, the process and the output. The input of the study is focused on the inclusive practices in hands-on learning environment addressing to the needs of learners with diverse backgrounds. The process of the research involves the qualitative research design, this process gives exploration of complex phenomena and understanding of experiences and perspective that allows researchers to gather descriptive data on how individuals perceive and experience inclusivity in educational settings, phenomenological approach that have the holistic understanding of inclusion by considering the whole experience of individuals within the educational context and the deep exploration of personal perceptions that helps reveal the subjective experiences of inclusion, the interview questionnaires and the thematic analysis and interpretation of the treatment of the data that helps the researchers ensure the well-supported findings about inclusive education practices and experiences. Finally, the output accords to the strategies of teachers' in dealing with students with diverse background and abilities.



### **Objectives of the study**

This study aims to identify strategies for promoting positive teacher-student relationship in diverse classroom. Examine the impact of inclusive classroom practices on the academic and personal development outcomes of learners from diverse backgrounds in hands-on learning environments and lastly is to determine effective materials to promote inclusivity and engage students with diverse backgrounds and abilities. This is also based from the concepts of fostering a sense of belongingness and promoting empathy among students. This will guide the researchers to have more equitable and effective hands-on learning experiences for all students regardless of their backgrounds.

### **Methodology**

The qualitative research design was used to obtain an in-depth understanding of the lived experiences of public-school teachers facing diverse learners in their classrooms. Qualitative methods are ideal for investigating the complexities and nuances of human experiences, making them well-suited for capturing the challenges teachers encounter. This research utilized semi-structured interviews. This format allows for flexibility while ensuring all participants are covered on important thematic areas.

In addition, phenomenology is one of the approaches used in this study since it explores and understands the perspective of the individuals involved. It seeks to uncover the essence of a phenomenon by examining how people interpret their world. Thus, Adams (2010), phenomenology is an approach to qualitative inquiry that is grounded in certain traditions of philosophy and the humanities, and that aims to reflect on pre-reflective human experience. The phenomenological researcher attempts to recapture and express in language experiential meanings as lived through, before we conceptualize, abstract, or explain them. Phenomenological methods are engaged to describe and interpret these meanings as they present themselves and are shaped by consciousness, language, our cognitive and noncognitive sensibilities, and our personal, social, and cultural preunderstandings. Phenomenological inquiry may be adopted to explore the unique meaning structures of any educational experience or lived phenomenon.

### **Data gathering procedure**

The study was conducted through interview of the public-school teachers in the Division of Benguet. It involved a total enumeration of fifteen (15) high school teachers. A self-constructed interview questions is the main data gathering instrument of the study. The questions are based on information about the Inclusive

practices in hands-on learning environment and the on how to address the needs of diverse learners. The interview questions gathered the following data: (1) Methods that encourage participation and engagement from all students, regardless of background and ability. (2) Modification of assessments to accommodate the diverse needs and abilities of students in the inclusive classroom. (3) Support systems available to overcome challenges related in promoting inclusivity. (4) Practices in addressing challenges in teaching to diverse learners. (5) Challenges of public-school teachers when working with diverse group of learners. Prior to the data collection, the researchers followed the research protocol. This was asking permission from the different public-school teachers and after getting their permission to conduct an interview, we proceeded to the administration of the interview questions. The result of the study was analyzed through thematic analysis of the given answers in the interview questions. The researcher focused on the understanding of the interactions and experiences of the subject being asked. According to Braun and Clarke (2012), thematic analysis is an easily accessible and theoretically flexible interpretative approach to qualitative data analysis that facilitates the identification and analysis of patterns or themes in a given data set. As such, thematic analysis serves as the reflection of the researcher's interpretation of the data collected.

### III. RESULTS AND DISCUSSION

The study found that the hands-on learning environment implemented in the classroom was effective in promoting inclusive practices and addressing the needs of diverse learners. The results showed that five teachers reported the hard time dealing with the learners, lack of confidence and inability to read, while ten out of fifteen teachers said, they had trouble creating individualized or differentiated activities since the student's language skills varied. Teachers often had limited time and resources, making it difficult to create unique activities for each student. They may have to prioritize one student needs over another, leading to a sense of guilt or inadequacy. Also, teachers struggle to accommodate the diverse cultural and linguistic backgrounds of their students, which can impact their ability to create effective individualized activities. In these results, teachers reported struggling to address these challenges effectively, indicating a need for support or resources to assist learners with varying needs and abilities. With variations in language proficiency levels among learners, teachers found it challenging to provide

activities that catered to each student's individual needs effectively. These subjects highlight the importance of providing teachers with adequate support and resources to address the diverse needs of students, particularly in terms of language skills and confidence-building. Additionally, strategies for creating individualized activities could be developed to better accommodate the range of language abilities within the classroom. However, the respondents stated that they collaborated with their colleagues and special education staff to address the problem. They also used technology and digital tools, engaged in ongoing professional development, prioritized student-centered learning, created flexible lesson plans, and used formative assessments and data analysis to overcome these challenges.

To meet the needs of diverse learners, 14 out of 15 teachers (90%) reported implementing differentiated instruction strategies. These maneuvers included offering extra help as remediation classes, home visitations, and follow-up activities with parents for children with learning difficulties. Others include tailoring learning instructions and activities to the specific needs of each student. The thematic analysis of this result reveals a focus on strategies employed by teachers to meet the needs of diverse learners, primarily through differentiated instruction. It highlights the proactive approach of teachers in catering to the diverse needs of their students. Strategies such as offering extra help through remediation classes, conducting home visitations, and engaging in follow-up activities with parents demonstrate a commitment to addressing individual learning difficulties and providing additional support where needed. Within the broader context of differentiated instruction, this sub-theme emphasizes the customization of learning materials and activities to suit the specific needs of each student. By tailoring instruction to individual learning styles, preferences, and abilities, teachers aim to create a more inclusive and effective learning environment. This analysis underscores the importance of personalized approaches in education, highlighting the efforts made by teachers to accommodate diverse learners and promote their academic success through tailored instruction and support strategies. In ensuring the inclusivity of classroom practices cater to students from cultural backgrounds, 8 teachers reported that localizing and contextualizing learning materials reduce barriers to learning and create a sense of community among students. Localized and contextualized learning



materials are more relevant to the student's lives, interests, and experiences. When learning materials are localized and contextualized, they become more authentic and meaningful to the students. This can lead to deeper understanding, critical thinking, and application of learning. 10 teachers reported that extrinsic motivation plays a crucial role in encouraging active participation and engagement from learners regardless of background and ability, driving behavior, improving performance, and enhancing overall well-being. These are in the forms of social recognition and praise, plus point system, rewards and incentives. On the other hand, 5 teachers reported that the integration of games like "Who Wants to be a Millionaire", "Family Feud", and "A Minute to Win It" help students understand difficult concepts by presenting them in a visual and auditory format, which can be more effective for some learners than traditional text-based materials. It also encouraged critical thinking by presenting different perspectives, debates, and complex issues. This can help students develop analytical skills, evaluate information, and form opinions. This values the incorporation of interactive games into the classroom as a means of promoting deeper understanding of difficult concepts and fostering critical thinking skills among students. By leveraging the engaging and interactive nature of games, educators can create dynamic learning environments that cater to diverse learning styles and enhance student engagement and learning outcomes.

#### IV. CONCLUSION AND RECOMMENDATIONS

Inclusive practices are vital for fostering environments where diversity is celebrated, and all individuals feel valued and supported. These practices not only promote equality but also enhance the overall effectiveness and cohesion of communities and organizations. By implementing inclusive practices such as the use of Universal Design for Learning (UDL), providing scaffolding and support, using authentic materials, encouraging student participation, building relationships and using culturally responsive teaching strategies. Moreover, it is recommended that there should be an assurance of the policies integrated into the organizational or community framework, continuous learning and awareness about different cultures, abilities, and perspectives among the teachers, implementation of assistive technologies and make necessary adjustments to facilities and provide mentorship programs and counseling services to support individual development and well-being. Implementing these recommendations can significantly enhance

inclusive practices, leading to more equitable and supportive environments where everyone can succeed and contribute meaningfully.

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