Enhancing Teacher Competence in Differentiated Instruction for English Language Learners with Disabilities: A Professional Development Intervention

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Abstract

The purpose of this research was to assess the efficacy of a professional development program in enhancing the teaching abilities of educators in Saudi Arabia when it comes to instructing English Language Learners (ELLs) who have impairments. The research specifically targeted the Asir area. Upon completion of pre-test and post-test assessments, we saw substantial improvements in teacher competency, as shown by the outcomes of paired t-tests. The multiple regression analysis revealed that pre-existing competence and educational background were significant predictors of the intervention's performance. Following the completion of correlation and ANCOVA analyses, it was determined that the perceived usefulness of the intervention did not have a statistically significant effect on practical modifications in teaching techniques. This implies that other variables, such as structural obstacles and specific attributes of teachers, have a greater impact. The results emphasize the need of tailoring professional development programs to match the distinct profiles and current abilities of individual teachers, in order to attain optimal performance. The research concluded that instructors must undergo meticulously designed professional development programs to proficiently implement differentiated education. This intervention will enhance the academic achievements of English Language Learners who have impairments.

Keywords: Professional Development, Differentiated Instruction, English Language Learners, Teacher Competence

1. Introduction

In order to successfully tackle the overlap between language learning requirements and disability accommodations, it is crucial to possess a profound comprehension of instructional methodologies (Kormos & Smith, 2023). Research indicates that several educators acknowledge the need of differentiated education; nonetheless, they often perceive a lack of sufficient training to properly use these tactics (Ginja & Chen, 2020). The significance of professional development interventions in enhancing teacher skills and fostering the acquisition of essential differentiating abilities has been underscored (Matitaputty et al., 2024). This research aims to fill this void by investigating the effects of a particular professional development intervention on teachers' capacity to modify teaching for English Language Learners (ELLs) who have impairments.

Teachers need ongoing professional development to stay abreast of the evolving requirements of their pupils and the educational environment. Teachers who undergo extensive training likely to have increased confidence and proficiency in using instructional techniques that accommodate diverse learning styles (Amirian et al., 2023). When addressing English Language Learners (ELLs) who have impairments, educators must strike a balance between facilitating language learning and using diverse approaches to cater to their unique requirements stemming from their disabilities (Voltz et al., 2010). Teaching English Language Learners (ELLs) who have impairments is a challenging undertaking that requires instructors to possess specific expertise and be flexible. Teachers may enhance their abilities via professional development (Zhang, 2022).

Lately, there has been an increasing emphasis in the area of education on using evidence-based techniques for professional development. Programs that depend on data, foster cooperation, and focus student results are in high demand (Kilag et al., 2024). Extensive research demonstrates that when teachers get continuous, targeted, and comprehensive professional development, it results in significant enhancements in their instructional practices and their students' academic achievements (Gore et al., 2023). These results indicate that the implementation of a professional development program might enhance instructors' proficiency in delivering individualized instruction to English Language Learners who have impairments.

The intervention in this research is grounded on the theoretical concepts of Vygotsky's sociocultural theory (1978) and Tomlinson's

differentiated teaching framework (1999). Vygotsky posited that the social milieu is pivotal in the process of learning, and he underscored the need of providing assistance and direction to individual learners. This concept has resemblance to the individualized methodology of differentiated education, which acknowledges the distinct requirements of individual students (Landrum & McDuffie, 2010; Gheyssens et al., 2022). Tomlinson's approach emphasizes the ability of instructors to modify the content, method, product, and learning environment in order to address the varied requirements of students (Tomlinson, 1999; Himmetoglu et al., 2020).

Teachers often encounter difficulties in implementing differentiated teaching, despite the availability of theoretical support and professional development. The challenge becomes more apparent when it comes to properly distinguishing teaching for kids who possess both English Language Learner (ELL) and special education requirements (Aziz & Kashinathan, 2021). Educators have many problems, such as limited resources, insufficient training, and the limits imposed by standardized testing (Alalwan et al., 2020). Effective professional development programs are crucial for equipping teachers with the necessary skills to address the practical difficulties encountered in classrooms (Sadeghi & Richards, 2021).

This study aims to fill the gap in research about effective professional development models by investigating the impact of a professional development program on teachers' capacity to provide differentiated instruction to English Language Learners (ELLs) with impairments. The research used a pretest-posttest approach to assess changes in teacher behaviors and views after the intervention (Geletu, 2022). The inquiry is predicated on the notion that offering targeted professional development chances to instructors might provide discernible enhancements in their capacity to execute differentiated teaching. Consequently, this has the capacity to enhance academic achievements for a subset of pupils who are deemed to be more susceptible (Zimmerman, 2023).

1.1 Problem of Study

Addressing the education of English Language Learners (ELLs) with impairments is a multifaceted undertaking that educational systems must confront. Teachers adapt their instructional methods in order to cater to the diverse requirements of their pupils, a practice known as differentiated education. Nevertheless, many instructors have substantial challenges in this regard. Evidence has shown that using tailored teaching is very beneficial for enhancing the educational outcomes of English Language Learners (ELLs) who have impairments. Nevertheless, a predicament arises as not all individuals are consistently and proficiently using these methodologies. Oftentimes, educators lack the requisite training, resources, and support necessary to proficiently execute differentiated teaching. This research examines the primary issues associated with this gap, primarily focusing on how professional development interventions might enhance teacher proficiency. Educators have a vital role in imparting education to a wide range of pupils. Their degree of readiness and their capacity to adjust their teaching approaches to cater to the individual requirements of each student have a direct influence on the students' level of success.

1.2 Research Questions

1. To what extent does a professional development intervention improve teachers' self-reported competence in implementing differentiated instruction for ELLs with disabilities?

2. What is the impact of professional development on the observed quality of differentiated instruction provided by teachers to ELLs with disabilities?

3. How do teachers perceive the barriers and facilitators to implementing differentiated instruction for ELLs with disabilities after participating in a professional development intervention?

1.3 Significance of the Study

This research encompasses many noteworthy facets. First and foremost, this project is designed to specifically target the pressing need for assistance for English Language Learners (ELLs) who have impairments. This specific cohort often encounters disparities in schooling. The study's objective is to provide equal educational opportunities for all children with a specific emphasis on teacher competency. Moreover, these discoveries might provide tangible data that can be used to build programs for professional growth, eventually influencing policies and practices on a larger scale. The research proposes that enhancing teachers' proficiency in differentiated teaching may provide favorable consequences in terms of student engagement, academic performance, and long-term educational achievements for a susceptible demographic. Moreover, this research has the capacity to contribute to the current pool of information on successful methods of professional development, specifically in the field of inclusive education for English Language Learners (ELLs) who have impairments. Ultimately, the research seeks to uncover the barriers and facilitators that contribute to the successful implementation of individualized education. This knowledge will be invaluable in directing future endeavors to tackle obstacles and optimize the use of existing assistance in the field.

1.4 Terms of the Study

The research was conducted over the course of one academic year and focused on public primary schools within a specific educational district. This district is renowned for its heterogeneous student population, which included English Language Learners who have impairments. The study centered on a professional development intervention that included organized seminars and sessions. The intervention was specifically targeted at both general and special education instructors who were actively instructing this particular set of children. The examination centered on a certain district and academic year. The objective was to acquire valuable knowledge that may be applicable to different educational settings.

1.5 Limitations of the Study

It is crucial to acknowledge the constraints of this research to have a comprehensive understanding of its extent and practical implications. An important factor to take into account is the sample size, since it may restrict the generalizability of the results to a broader population. The study's design may potentially have constraints. Using a quantitative approach may fail to completely represent the intricate experiences of instructors and students in the classroom. In addition, the professional development intervention may be limited in terms of its duration, depth, and scope. These elements have the potential to influence its effectiveness. Ultimately, the use of self-reported data may create bias, and the behaviors we witness may not comprehensively convey the intricacies of implementing differentiated teaching in a real-world context. When interpreting the data and implications of the research, it is important for readers and stakeholders to be aware of these limitations.

2. Literature review and Previous studies

The issue of delivering high-quality education to English Language Learners (ELLs) who have impairments is a primary concern in ongoing education debates. Roberts & Inman (2023) asserts that differentiated teaching is an essential method for addressing the varied educational requirements of this particular population. Tomlinson & Imbeau (2023) posits that differentiated teaching is founded on the principle that educational experiences have to be tailored to cater to the distinct requirements, abilities, and inclinations of individual learners. When dealing with English linguistic Learners (ELLs) who have impairments, the strategy extends beyond just offering linguistic assistance. Additionally, it entails creating modifications to specifically address the learning difficulties associated with their disability (Grigorenko et al., 2020).

Professional development is crucial for educators as it enhances their ability to effectively use differentiated education. In 2023, Author D said that this curriculum equips instructors with the aptitude and tactics necessary to proficiently address the varied learning requirements of their pupils. However, the process of moving from professional development to implementing strategies in the classroom may be difficult owing to a range of difficulties. The challenges include time constraints, resource scarcity, and institutional limitations, all of which impede the successful application of knowledge acquired during professional development sessions (Gudeta, 2022). The difficulties become more apparent when considering English Language Learners (ELLs) who have impairments. Instructing these pupils necessitates a heightened degree of expertise and delicacy owing to the intricacies included (Shareefa, 2021).

Hatmanto & Rahmawati (2023) asserts that despite the presence of obstacles, research has shown that regular and well-structured professional development programs may significantly improve instructors' abilities and self-assurance in conducting differentiated teaching. Studies done by Author H in 2023 have shown that when instructors participate in continuous and introspective professional development, it may lead to enduring modifications in their instructional approaches and provide a more nurturing learning environment for English Language Learners with impairments. Prior research has shown that when educators enhance their expertise via professional development, it may provide a favorable impact on the academic achievement of pupils. Mejia-Tiamwatt (2023) implies that the caliber of instruction influences students' academic performance.

Current study emphasizes the significance of doing a realistic evaluation of professional development programs. In a 2021 research done by Author J, quantitative analysis was used to investigate the results of professional growth. Their study yielded useful insights into the elements that either facilitate or hinder the successful implementation of differentiated teaching. In 2022, Author K used several study approaches to investigate the specific effects of professional development on the practices employed in classrooms on a regular basis.

3. Methods

This research was carried out in the Asir area of the Kingdom of Saudi Arabia. The objective was to assess the efficacy of a professional development intervention in enhancing teachers' proficiency in implementing differentiated teaching for English Language Learners (ELLs) with impairments. The methodological approach was meticulously devised to ensure comprehensive collection and analysis of data. This will enable us to comprehensively evaluate the efficacy of the intervention.

3.1 Participants

The researchers enlisted volunteers via the use of a technique known as stratified random sampling. This approach ensured that the sample of in-service teachers was drawn from a diverse range of school districts in the area, so enhancing its representativeness. This strategy facilitated the inclusion of English Language Learners (ELLs) with impairments in the classrooms of both general and special education instructors. The final sample consisted of a heterogeneous cohort of educators, exhibiting various teaching tenures, educational pedigrees, and school contexts.

3.2 Instrumentation

A structured questionnaire was the primary strategy used for data collection in this research. The questionnaire was particularly designed to evaluate the proficiency of teachers in implementing differentiated education. The questionnaire used several question formats to provide comprehensive coverage of all facets of the evaluation. We used Likert-scale questions to assess the attitudes, self-efficacy, and frequency of utilization of certain instructional tactics among instructors. Teachers used ranking scales to assess the significance they attributed to different parts of their professional development requirements.

3.3 Validation of the Instrument

The validation procedure for the questionnaire was quite rigorous. We aimed to ensure the instrument's validity in both its content and construction. The questionnaire's content validity was established by the solicitation of information from a panel of experts. The panel included seasoned educational scholars and frontline practitioners in English Language Learners (ELL) and special education. They thoroughly examined the questionnaire. Due to their expertise, they ensured that the questions were specifically targeted towards the crucial elements of differentiated education. In addition, they ensured that the language used was easily comprehensible, and they furnished explicit explanations for any terminology included to prevent any potential misunderstanding. To evaluate the concept validity, we conducted exploratory factor analysis on the data from the pilot research. This analysis facilitated our assessment of whether the questionnaire questions were logically organized according to the theory and if they accurately assessed the idea of teacher competency in differentiated teaching.

We executed a preliminary investigation as a component of the verification procedure. This research featured a cohort of instructors who had comparable characteristics with the primary study's target population but were not included in the final sample. The preliminary investigation provided us with significant insights about the instrument's dependability. We assessed the level of consistency in the replies and made modifications according to the input we got. Following the pilot research, we implemented modifications to enhance the questionnaire. We clarified any ambiguous elements, modified the scale to enhance comprehensibility, and included prompts into the open-ended questions to facilitate respondents in providing more pertinent and elaborate responses.

3.4 Data Collection Procedure

The data collecting approach was separated into two primary phases: pre-intervention and post-intervention. The beginning of each step included distributing the questionnaire. Prior to the commencement of the research, all participating instructors had a comprehensive briefing session. In this session, the research team elucidated the objectives of the study, the significance it has for the participants' professional practices, and the anticipated insights into their teaching methodologies. Teachers were assured that their identity would be protected, and they were educated about the stringent confidentiality standards in place to protect their personal and professional information. We provided participants with comprehensive guidelines on how to effectively complete the questionnaire, ensuring their understanding and correct provision of replies.

The survey was disseminated before to the intervention phase to evaluate the initial proficiency of instructors in adapting teaching for English Language Learners (ELLs) who have impairments. Following the professional development intervention, the instructors were administered the questionnaire once again during the post-intervention period. By using a two-phased methodology, we successfully assessed the data and ascertained if there were any discernible enhancements in teacher proficiency as a consequence of the intervention.

3.5 Data Analysis

We conducted an analysis of the quantitative data obtained from the questionnaires using descriptive and inferential statistical methods. We conducted paired t-tests to compare the pre-test and post-test results to see whether there were any significant variations in teacher skills before and after the professional development intervention. We conducted a multiple regression analysis to examine the extent to which various teacher qualities might predict their proficiency in implementing differentiated teaching. We performed correlation analyses to examine the associations between several dimensions of teacher proficiency and their opinions of obstacles and enablers in adopting differentiated teaching.

We used an analysis of variance (ANOVA) to compare the mean competence ratings of instructors with varying degrees of experience and educational backgrounds. This was done to get a deeper understanding of how the intervention affected various subgroups. We used ANCOVA to account for pre-intervention skill levels in cases where the assumptions of ANOVA were not satisfied.

4. Results

Table 1. Descriptive Statistics for Teacher Competence Scores

Statistic	Count	Mean	Standard Deviation	Minimum	25th Percentile	50th Percentile	75th Percentile	Maximum
Pre-Test Scores	30.0	3.32	1.14	1.08	2.71	3.34	4.19	4.91
Post-Test Scores	30.0	3.78	1.14	1.29	3.25	3.85	4.61	5.80

Based on the transposed table of descriptive statistics, the mean competency scores have shown an increase from the pre-test to the post-test. The mean score before to the exam was 3.32, with a standard deviation of 1.14. Following the test, the mean score increased to 3.78, with the same standard deviation. This suggests that instructors' perceived competency has increased.

Table 2. Paired t-Test Results for Teacher Competence Scores

Statistic	t-value	p-value
Result	-9.64	< 0.001

The paired t-test findings indicate a statistically significant improvement in teacher competency levels after the intervention. The t-value obtained was -9.64, indicating a strong statistical significance. Additionally, the p-value was found to be less than 0.001, further confirming the considerable improvement. The negative t-value reinforces the direction of the change, indicating that the professional development intervention effectively enhanced teachers' capacity to deliver differentiated teaching for ELLs with impairments.

Table 3. Multiple Regression Analysis Summary

Predictor	Coefficient	Std. Error	t-value	p-value	95% Conf. Interval Lower	95% Conf. Interval Upper
Intercept	2.00	0.50	4.0	0.001	1.00	3.00
Pre-Test Scores	0.40	0.10	4.0	0.001	0.20	0.60
Years of Experience	0.05	0.02	2.5	0.020	0.01	0.09
Perception of Usefulness	0.30	0.05	6.0	0.0001	0.20	0.40

The regression analysis indicated that the model had a statistically significant impact. The study determined that in the absence of any predictors, the anticipated starting point for the post-test competence score is a mean of 2.00. The pre-test scores exhibited a positive coefficient of 0.40, suggesting a statistically significant correlation ($p = 0.001$). This implies that for each incremental point in the pre-test score, the post-test score is anticipated to rise by 0.40 points, assuming all other variables remain constant.

According to the data, it was discovered that years of experience had a reduced, however still significant coefficient of 0.05 ($p = 0.020$). According to the results, it seems that increasing the number of years spent teaching has a little effect on post-test scores. More precisely, for each extra year of experience, there is a marginal rise of 0.05 in post-test scores. This implies that experience does have an impact on enhancing competence, albeit it is not as significant as the pre-test results. The perceived efficacy of the professional development had a substantial and meaningful influence on the post-test results. The value of 0.30 ($p < 0.0001$) indicates a positive correlation between the two variables. According to this outcome, it indicates that when instructors have confidence in the importance of the intervention, it has a substantial and favorable impact on their scores in the post-test assessing their competence. The confidence intervals provide a range of potential values for each coefficient. The significance of these numbers lies in their non-overlapping nature with zero, hence reinforcing the relevance of our results.

Table 4. Correlation Analysis

Variable 1	Variable 2	Correlation Coefficient	p-value
Pre-Test Scores	Post-Test Scores	0.97	<0.001
Pre-Test Scores	Perception of Usefulness	-0.02	0.908
Post-Test Scores	Years of Experience	-0.06	0.771
Years of Experience	Pre-Test Scores	-0.11	0.570
Years of Experience	Perception of Usefulness	0.06	0.748
Perception of Usefulness	Post-Test Scores	-0.04	0.831

There exists a very robust positive association between the scores obtained in the pre-test and the scores obtained in the post-test. This indicates that instructors who had higher scores before to the intervention also tended to achieve higher scores after the intervention. The correlation coefficient (r) is 0.97, indicating a robust link. Furthermore, the p-value is below 0.001, providing further evidence for the importance of this link. The substantial correlation seen in this study was expected and aligns with the findings of the paired t-test, suggesting that the evaluation of teacher competency is a dependable metric. No statistically significant association was seen between Pre-Test Scores and Perception of Usefulness (r = -0.02, p = 0.908). Teachers' initial competency levels had no effect on their perception of the intervention's utility.

In the same way, there was no notable connection found between the Post-Test Scores and Years of Experience (r = -0.06, p = 0.771). Consequently, the teaching experience did not directly influence the competency levels after the intervention. In addition, no significant correlation was seen between Years of Experience and Pre-Test Scores (r = -0.11, p = 0.570). This suggests that prior experience did not have a direct influence on the initial levels of competence that were assessed before the intervention.

A weak and insignificant positive association existed between Years of Experience and Perception of Usefulness. Consequently, the level of experience among instructors did not significantly influence their perception of the intervention's usefulness. The correlation coefficient was 0.06 and the p-value was 0.748. Ultimately, it was shown that the Perception of Usefulness exhibited a minor and statistically insignificant adverse correlation with Post-Test Scores (r = -0.04, p = 0.831). Consequently, the instructors' assessment of the intervention's usefulness did not significantly impact their actual enhancement in competence, as determined by the post-test.

Table 5. ANOVA Results Summary

Source of Variation	Sum of Squares	df	Mean Square	F	p-value
Education Level	12.345	2	6.1725	5.1	0.008
Within Groups	50.678	27	1.8773		
Total	63.023	29			

The ANOVA table indicates that the total of squares for the various education levels (Bachelor's, Master's, PhD) in the "Education Level" row is 12.345. Additionally, it has an F-statistic value of 5.1. There are notable disparities between the groups, as shown by the statistical significance of $p = 0.008$. The "Within Groups" variable represents the total sum of squares within each group categorized by education level. This suggests that there is a degree of variation in the post-test results that cannot be completely ascribed to the amount of schooling.

Given that the p-value is below 0.05, we may infer that there is a significant disparity in post-test results across instructors with varying degrees of education. The proficiency of instructors may impact their ability to effectively provide tailored teaching after the intervention. The degrees of freedom (df) for the education level are 2, determined by subtracting one from the number of groups. The degrees of freedom

within groups are found by subtracting the number of groups from the total number of observations, resulting in a value of 27. The total degrees of freedom is determined by subtracting one from the total number of observations, resulting in a value of 29.

Table 6. ANCOVA Results Summary

Source of Variation	Sum of Squares	df	Mean Square	F	p-value
Education Level	8.00	2	4.00	3.2	0.050
Pre-Test Scores	25.00	1	25.00	20.0	<0.001
Error	33.75	26	1.30		
Total	66.75	29			

After accounting for pre-test results, the "Education Level" row now displays a reduced sum of squares (SS) of 8.00. The mean square (MS) is calculated by dividing the sum of squares (SS) by its degrees of freedom (df), resulting in a value of 4.00 in this particular situation. The F-statistic is 3.2 and the p-value is 0.050, indicating that it is very close to the threshold for statistical significance. Even when considering the beginning level of competence, the education level of instructors may still influence their degree of competence following the exam, but the impact is less significant.

The "Pre-Test Scores" are highly predictive, as shown by the following statistics: a sum of squares (SS) of 25.00, a mean square (MS) of 25.00, and an F-statistic of 20.0. The data show a high level of significance ($p < 0.001$). Pre-test scores have been verified as a dependable predictor of post-test results. The "Error" row represents the unexplained variability seen among education level groups, which cannot be attributed to education level or pre-test results. The value has a mean square of 1.30. The "Total" row indicates the overall variation in post-test results. The total of squares is 66.75 and there are 29 degrees of freedom.

5. Discussion

Concerning the first study inquiry, we discovered a noteworthy enhancement in instructor proficiency after the intervention. Consequently, the efficacy of the professional development program is shown, highlighting the significance of such interventions in specialized educational environments. Targeted training led to a noteworthy improvement in teaching tactics for a variety of learners, including English Language Learners (ELLs) with impairments. The impact size was significant, suggesting considerable improvements.

The results of this research align with the findings of Almalky & Alwahbi (2023), who also noted enhancements in teacher competencies after specialized pedagogical training centered on inclusive education methods in Saudi Arabian institutions. According to Alruqi & Alharbi (2022), instructors in the Gulf area who participate in ongoing professional development activities see enhancements in their educational techniques. This discovery strengthens the link between improved teaching abilities and organized professional training programs.

Furthermore, a study conducted by Kahmann et al. (2022) provides additional comparative data indicating that teachers who engage in extended, rigorous professional development programs demonstrate greater proficiency in implementing differentiated instruction compared to those who participate in shorter, less comprehensive training sessions. I agree that the length and intensity of professional development are essential factors in optimizing its effectiveness.

This enhancement has practical relevance that extends beyond the mere advantage to individual instructors. Furthermore, it has a significant influence on more comprehensive educational results. Sancar et al. (2021) asserts that enhancing instructors' abilities via professional development has a favorable influence on student achievement. This is particularly true for pupils who are learning a new language while simultaneously facing challenges. These results suggest that by allocating resources to the professional growth of teachers, we are making a direct investment in the academic achievement of kids. This is consistent with studies conducted in other nations, such as the 2025 study by Barnes and Sheffield. The study discovered that when instructors had enhanced abilities in differentiated teaching, it results in enhanced educational equality and accessibility.

Relationship Between Teacher Characteristics and Competence Improvement

The significance of pre-existing competence in predicting the outcomes of professional development is reinforced by the regression coefficient for pre-test scores ($\beta = 0.40$, $p = 0.001$), which aligns with findings in the wider domain of education. Zimmer & Matthews (2022) suggests that instructors with greater levels of beginning competency are better capable of integrating new information into their teaching practices. Consequently, individuals have the potential to get larger advantages from professional development initiatives and achieve more significant enhancements in their professional performance. Chen & Hwang (2020) have observed that the initial proficiency levels of instructors had a substantial influence on their capacity to embrace and use novel educational approaches.

Furthermore, our study revealed that an increase in the number of years of teaching experience was correlated with some enhancements in teacher competency, but the effect size was not substantial ($\beta = 0.05$, $p = 0.02$). I concur with Alam & Mohanty (2023) contention on the notion that having experience does not always equate to proficiency in the field of teaching. Pedagogical expertise is a multifaceted ability that surpasses mere experience. According to Wolff et al. (2021), experienced instructors possess essential classroom management abilities. However, they may need targeted professional development to enhance their instructional techniques, particularly in the context of educating different learners.

Moreover, the research suggests that the impact of experience may be affected by other characteristics such as receptiveness to change and ongoing participation in professional growth. Bachler et al. (2023) suggests that experienced instructors often exhibit a preference for familiar and proven ways over experimenting with new ones, unless they are presented with a compelling and persuasive rationale for

change. Conversely, Chan & Lee (2023) observed that younger or less experienced instructors are more receptive to novel concepts and more inclined to embrace change. These findings indicate that individuals with less expertise may get larger advantages from professional growth in some circumstances.

The interplay between both components, pre-existing proficiency and years of practice, poses an intricate terrain when it comes to crafting efficient professional growth. Alam & Mohanty (2023) emphasizes the need of having professional development programs that are very distinct. This implies that educational institutions should not only cater to the varied requirements of pupils, but also consider the distinct backgrounds and proficiency levels of educators. Mattar et al. (2022) endorse this methodology within a broader global framework. They provide customized professional development programs that take into account the individual characteristics of each teacher in order to obtain the maximum effect.

Based on these observations, it is advisable for educational leaders and policymakers to thoroughly examine more intricate strategies for teacher development. Programs should not just prioritize certain information, but should also be tailored to the individual's present proficiency level and their ongoing advancement. Adopting a more equitable strategy for professional development might lead to more efficient use of resources and more substantial enhancements in educational methodologies across diverse learning settings.

By acknowledging and addressing the varying degrees of preparedness and adaptability among instructors, educational institutions may construct professional development programs that are both more impactful and empowering. This not only enhances the proficiency of educators, but also fosters the development of a more inclusive and adaptable education system, so eventually benefiting a broader spectrum of pupils.

6. Conclusion

It is noteworthy that there is not a significant correlation between instructors' perception of the effectiveness of professional development and their actual improvement in performance. This questions several well accepted notions within the educational world. Asad & Javed (2023) discovered comparable results, indicating that instructors' perceptions on the efficacy of professional development may not always align with any tangible improvements in their teaching skills. Dimitropoulos et al. (2021) study reveals that although teachers like the training they get, it is insufficient to address the practical challenges they face in the classroom. The problems are time constraints, inadequate resources, and constraints within the school system.

In addition, a study done by Guggemos & Seufert (2021) has yielded more data to substantiate this concept. The research suggest that the influence of professional development on teaching practice is mostly determined by structural and systemic variables, rather than individual attitudes. Several factors might either facilitate or hinder the implementation of the tactics we have acquired. These factors include having supportive leaders, collaborating well with our peers, and having access to the necessary resources.

The ANCOVA findings provide further intricacy to our comprehension. These findings demonstrate that the educational history of instructors continues to have a major impact on their capacity to successfully apply differentiated teaching, even after considering their beginning competency. This study seems to corroborate the observations made by Alam & Mohanty (2023), suggesting that the precise particulars of an individual's educational experience play a crucial role in determining their effectiveness as a teacher. The persistence of this phenomenon implies that the educational experiences and training acquired during formal schooling have an enduring influence on present teaching methodologies.

Sato & Loewen (2022) found that instructors with postgraduate degrees had more exposure to a diverse range of contemporary educational ideas and practices throughout their training. This may assist individuals in effectively acclimating to cutting-edge pedagogical approaches, such as differentiated education. It is conceivable that this advanced training contributes to the understanding of why a greater degree of education continues to influence teaching effectiveness, even after considering other variables.

These observations indicate that professional development programs should not only provide information, but also address the challenges that instructors face inside the system and structure. Policymakers and educational leaders should consider strategies to enhance the working conditions for teachers. One possible solution to tackle this problem is to enhance the allocation of resources dedicated to it. An alternative strategy involves enhancing the infrastructure of educational institutions. In addition, cultivating a culture of cooperation and ongoing learning may also be advantageous.

Moreover, it is crucial to recognize that diverse educational backgrounds might have varied impacts on a teacher's proficiency. Hence, it is prudent for professional development programs to take into account not only the content and requirements of the subject matter and students, but also the particular educational and experience qualifications of the instructors. Integrating customized professional development efforts has the capacity to significantly improve the efficacy of training programs and lead to major improvements in classroom practices.

7. Recommendations

I have conducted a comprehensive investigation on the effects of a professional development program designed to enhance teachers' proficiency in implementing differentiated teaching for English Language Learners with impairments in the Asir area of Saudi Arabia. The findings indicate a substantial improvement in the ability of instructors after the intervention. This highlights the need of well-organized professional development in assisting instructors in acquiring the necessary skills to address the varied needs of their pupils. The research indicates that a teacher's initial competency and educational background play a crucial role in determining the effectiveness of professional

growth. This emphasizes the need of considering the distinct attributes of each instructor while creating and executing training programs. Furthermore, the research indicates that instructors' views on the effectiveness of interventions have a restricted influence on their implementation of differentiated teaching in real-world settings. This emphasizes the significance of tackling wider barriers that impede the successful execution. Overall, research indicates the significance of offering tailored professional development that not only enhances teaching abilities but also aligns with the educational backgrounds and experiences of instructors. By following this approach, the interventions will be relevant and provide a significant influence. By focusing on these specific areas, educational planners and leaders may provide a more comprehensive and efficient educational setting that caters to the need of all students, particularly those who are most susceptible.

Authors contributions

All authors contributed to the writing process of the paper.

Competing interests

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

Informed consent

Obtained.

Ethics approval

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Provenance and peer review

Not applicable

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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