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The Impact of Training on Teachers' Knowledge and Understanding of Different Learning Difficulties Among Students

Sadia Ambarin *

Muhammad Naseer Ud Din †

Faridullah Khan ‡

Corresponding Author: Muhammad Naseer Ud Din (Professor, Department of Education and Psychology, Kohat University of Science & Technology, Kohat, KP, Pakistan.

Email: dr.naseeruddin@kust.edu.pk

Abstract: *This study aimed to evaluate teachers' comprehension and awareness of various learning disabilities in students through experimentation. The research was carried out at Cantt Board Public School, District Kohat, using purposive sampling to choose ten teachers who participated in a two-week training programme. The study employed a pre-test and post-test design with a treatment that included activity-based training and strategies aimed at enhancing the identification and coping mechanisms of students with learning disabilities. The study showed that the training had a significant positive effect on teachers' professional development, allowing them to proficiently recognise and assist students who experience learning challenges. The study recommends the adoption of comparable training programmes in both public and private schools throughout different regions of Khyber Pakhtunkhwa. This study examines the acquisition of essential skills by teachers through training programmes, focusing on their instructional abilities and coping strategies when dealing with students experiencing learning difficulties.*

Key Words: Essential Skills Acquisition, Teacher Training, Instructional Abilities, Coping Strategies, Learning Difficulties, Professional Development

Introduction

The impact of training on teachers' knowledge and understanding of different learning difficulties among students is a crucial aspect of effective education. With proper training, teachers gain the necessary insights and tools to identify, support, and accommodate students facing various learning challenges. By increasing their awareness and understanding

of different learning difficulties, educators can tailor their instructional approaches and provide targeted interventions to meet the diverse needs of their students. Such training empowers teachers to create inclusive classrooms that foster an environment of empathy, equity, and success for all learners.

Teacher training is crucial for improving their comprehension of the diverse learning

* PhD Scholar, Department of Education and Psychology, Kohat University of Science & Technology, Kohat, KP, Pakistan.

† Professor, Department of Education and Psychology, Kohat University of Science & Technology, Kohat, KP, Pakistan.

‡ Assistant Professor, Department of Education and Psychology, Kohat University of Science & Technology, Kohat, KP, Pakistan.

difficulties encountered by students in the ever-changing contemporary educational setting. Effective professional development enables teachers to support all students' success, regardless of their background or circumstances. Teachers who specialise in researching learning difficulties serve as role models for promoting diversity and inclusivity in education.

Professional development is now a fundamental aspect of human resource development for educational leadership and management (Mulvey, 2013). Investing in professional development can benefit individuals, organizations, and educational systems. Thorpe & Garside (2017) also make this assertion. Professional development strategies should target education professionals, including teachers, lecturers, educational leaders, and policymakers. While there is a large body of work on educator professional development, the material that is currently available reveals a significant dearth of research on educational management and administration professional development. The policies, methods, and initiatives of an organisation are all part of its professional development to facilitate and assist employees in fulfilling their personal and organizational objectives. (Webb, Diamond-Wells, & Jeffs, 2017). Nguyen (2019) defines professional development as activities aimed at improving an employee's productivity in their assigned role, based on relevant literature and a focus on profession and professionalism. Professional growth refers to any activity or experience that enhances an individual's knowledge and skills in their chosen field. Several scholars have identified career development models. (Pill, 2005) analyses four professional development strategies for higher education academics. Action Research Model, Reflective Practitioner Model, Metacognitive Theory, and Novice to Expert Model are included. (Kennedy, 2014) classifies nine different approaches to professional training and development into three broad categories based on their potential to foster individual agency and systemic change. Models that can be transmitted include the cascade, deficit, training, and reward

systems. Community-based, coaching/mentoring-based, and standards-based methods all figure prominently among the transitional solutions. Both action research and transformational approaches fall under this category. (Kennedy, 2014) The proposition posits that as a model progresses from the transmissive phase to the transitional phase and ultimately to the transformative phase, there is a corresponding increase in its level of autonomy. Educators engage in a process of professional development wherein they engage in introspection, renew their commitment, and enhance their understanding of the lofty objectives of their vocation. (Kelchtermans, Day, & Sachs, 2004). Learning and using new abilities to better serve students is what (Avalos, 2011) means by "professional development" for educators. (Guskey, 2002) defines teacher professional development courses as organised endeavours aimed at modifying teachers' classroom practises, attitudes, beliefs, and students' learning outcomes. The NIL in 2009 defined learning difficulties as challenges in acquiring specific skills, such as calculation, writing, and reading, that manifest in behaviour and arise after enrolling in school, despite possessing average or above-average intelligence. Their academic potential remains unfulfilled, resulting in below-average academic performance in school (Dilshad & Iqbal, 2010). A disparity exists between the genuine academic achievement of students on achievement assessments and their anticipated performance on cognitive ability evaluations, particularly among those who encounter learning difficulties. This disparity has been associated with various elementary psychological processing functions. (Korhonen & Törmä, 2016). This definition holds true at all academic levels, irrespective of the stage at which these concerns first emerge. (Owens et al., 2018). It is more common to use the term "learning difficulties" rather than "learning disabilities." (Brandon & KEYES, 2012) to distinguish attention deficit hyperactivity disorder and Learning Disabilities, with the former being manageable through intensive educational intervention. Inclusive education prioritises the education of individuals with

special educational needs (SEN) to avoid segregating children with disabilities based on a medical model of impairment (McCormick, Kurth, Chambless, Ipsen, & Hall, 2021). Inclusive education is recognised as a means to provide equitable educational opportunities for students with disabilities and special educational needs, as they are entitled to receive education of comparable quality to their non-disabled peers (Hammond & Albert, 2020). The educational challenges faced by students in Pakistan highlight the pressing necessity for educators to pursue further professional development. Educators with greater expertise in this domain could potentially make a greater contribution to inclusive education. Researchers focused on equipping teachers to support students with learning difficulties. This research has practical implications for teachers, enabling them to improve their classroom practises and effectively work with students from diverse backgrounds, including those with learning disabilities.

The Theoretical Framework of the Study

The educational environment is heterogeneous, as students may present diverse learning challenges that impede their academic advancement. Educators have a crucial responsibility in addressing these challenges and providing effective assistance to students. This study's theoretical framework investigates the effect of training programmes on teachers' comprehension and awareness of diverse learning challenges in students. This framework aims to improve education quality by equipping teachers with the skills and expertise to effectively address diverse learning needs through training.

The framework is based on social constructivism theory. This theory posits that learning is a social and collaborative process that involves active participation. Effective interactions and shared experiences can enhance teachers' knowledge and comprehension of learning difficulties. Training programmes offer teachers chances for collaborative learning, sharing ideas and strategies with colleagues, and self-reflection

on their practices. Training programmes can utilise the social constructivist approach to aid teachers in constructing knowledge and understanding diverse learning difficulties.

Professional development is crucial for the growth and competence of teachers. Reflective practice is an integral part of this process. Teacher training programmes for learning difficulties provide educators with current knowledge and evidence-based strategies. Successful training programmes incorporate reflective practice, which prompts teachers to analyse their teaching methods and adapt them to meet the unique needs of their students. Reflective practice enhances metacognitive awareness, enabling teachers to comprehend the effects of their instructional approaches on students' learning challenges.

Cognitive Load Theory proposes that people have a finite capacity for information processing. Insufficient knowledge and understanding of learning difficulties among teachers can lead to excessive cognitive load, which impedes effective learning among students. Training programmes aim to alleviate the cognitive load for teachers by providing them with targeted strategies and techniques to address diverse learning challenges. Training programmes can enhance the education of students with diverse learning difficulties by offering teachers targeted interventions and instructional approaches.

Inclusive education prioritises equal opportunities for all students, irrespective of their learning challenges, while differentiated instruction is also a key aspect of this approach. Training programmes must adhere to inclusive education principles and instruct teachers on how to implement differentiated instruction. Differentiated instruction acknowledges the diverse learning needs and styles of students, necessitating the use of varied teaching strategies and resources by educators. Teacher training programmes should provide educators with the necessary expertise to identify and remedy individual learning challenges, allowing them to create customised teaching strategies that meet the distinctive needs of each student.

Effective collaboration between general education teachers and special education professionals is crucial for supporting students with learning difficulties. Training programmes should encourage collaborative partnerships and facilitate the exchange of expertise and resources between the involved parties. Collaboration between teachers and special education professionals can improve teachers' understanding of various learning difficulties. The collaborative approach enhances the support system for students with learning difficulties, resulting in better educational outcomes.

The significance of training programmes in providing teachers with the essential knowledge and comprehension of diverse learning difficulties among students is emphasised in this theoretical framework. Training programmes can equip teachers to address diverse learning needs by adopting social constructivism, reflective practice, cognitive load theory, inclusive education, differentiated instruction, and collaboration with special education professionals. The framework aims to improve educational practises and outcomes, providing necessary academic support to all students for their success.

The Hypothesis of the Study

Ho: There is no correlation between teachers' training regarding awareness and ability to address their pupils' learning disabilities and their professional development.

Ho: There is no significant difference in the before-training intervention of teachers' scores on the pretest and posttest.

Objectives of the study

1. To determine where teachers stand in terms of their understanding of learning disabilities.
2. To design and implement a training program aimed at improving teachers' knowledge and understanding of various learning difficulties.
3. To measure the effectiveness of the training program in enhancing teachers' knowledge and understanding of different learning difficulties.
4. To compare the knowledge and understanding of teachers before and after the training program to determine the extent of improvement.

Methodology of the Study

The study is both experimental and action-oriented. A single group. Pre-test A post-test design was utilized to assess the effectiveness of teacher training in enhancing their professional development in understanding and addressing diverse learning challenges among students. The study population consisted of all teachers at Cantt Board Public School Kohat. The study employed purposive sampling to select a sample of ten teachers from diverse subjects, including Urdu, English, and mathematics. Following the administration of a pre-test, a two-week training session was conducted for teachers, after which a post-test was administered. The test results were analyzed using SPSS-22's paired sample t-test.

Data Analysis

The pre-test and post-test results were analyzed using SPSS-22 in accordance with the study's objectives. The results are presented in the following section.

Table 1

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Teachers	Pre-test	39.0000	10	12.79757	4.04695
	Post-test	67.8000	10	21.38431	6.76231

The pre-test mean score was 39.00 (SD = 12.80, SEM = 4.05) and the post-test mean score was 67.80 (SD = 21.38, SEM = 6.76).

Pre- and post-test samples included 10 teachers.

Table 2

Paired Samples Correlations

		N	Correlation	Sig.
Teachers	Pre-test & Post-test	10	.951	.000

The post-test and pre-test scores were positively correlated ($r = .951$) in a sample of

10 teachers. The connection was statistically significant ($p < .001$).

Table 3

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
teachers ^a Pretest - Post-test	-28.80000	10.03106	3.17210	-35.97579	-21.62421	-9.079	9	.000

The post-test and pretest mean difference was -28.80, while an SD (standard deviation) of 10.03 and a standard error mean of 3.17. The

score difference 95% confidence interval was -35.98 to -21.62. Scores differed significantly ($t(9) = -9.08, p < .001$).

Regression Analysis

Table 4

Descriptive Statistics

	Mean	Std. Deviation	N
Pre-test	39.0000	12.79757	10
Post-test	67.8000	21.38431	10

Pre- and post-test descriptive statistics are shown in the table. A sample of 10 people yielded a pre-test mean score is 39.0000 and

(SD) 12.79757. The post-test mean score is 67.8000 with a standard deviation of 21.38431, similarly based on 10 subjects.

Table 5

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				Sig. F Change	Durbin-Watson
					R Square Change	F Change	df1	df2		
1	.951 ^a	.904	.892	4.20230	.904	75.469	1	8	.000	.600

a. Predictors: posttest (Constant),

b. DV: pretest

Using Model 1, which has a constant and the predictor "Posttest," we get these findings: R

= .951. The R Square value was .904, indicating that the independent variable accounted for

90.4% of the variance in the DV. The (CD) coefficient of determination (R²) was .892. This is 4.20230 standard deviations above the mean. By .904 R Square Change, the predictor variable enhanced the model. With an F

Change value of 75.469, between 1 and 8 degrees of freedom, and a significance level of .000, the model was found to be statistically significant. In this research, we looked at the phenomenon known as the "Pre-test."

Table 6

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1332.725	1	1332.725	75.469	.000 ^b
	Residual	141.275	8	17.659		
	Total	1474.000	9			

a. DV: Pre-test

b. Predictors: Posttest (Constant)

An analysis of variance was accomplished to look at the connection among the dependent (Pretest) and independent (Posttest) variables. There was only one predictor (the Posttest) and one constant term. The regression model well explained the dependent variable, as indicated by a big F-value (75.469) and a significant p-value (.001). The sum and mean squares

(1332.725) demonstrated that 90.49 per cent of the variance was accounted for by the regression model. The sum of squares that were left over after fitting the model was 141.275. The model's sum of squares was 1474 000, with the majority of that coming from the regression and residual components.

Table 7

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.418	4.636		.090	.930	-10.272	11.108
	Post-test	.569	.066	.951	8.687	.000	.418	.720

a. Dependent Variable: Pre test

A linear regression model was used to analyse changes between the pretest and posttest. According to the unstandardized coefficients, a one-point rise in the Posttest results in a 0.569-point increase in the Pretest score. There is a strong positive correlation between Posttest and Pretest results, as measured by standardized coefficients (Beta). The t-value for this pair of variables is 8.687, which is statistically significant at the .001 level. The confidence CI for the unstandardized posttest coefficient is (0.418, 0.720).

Discussion

The current study indicates that training interventions significantly affect the professional lives of teachers. The training of teachers resulted in a significant improvement in their capacity to recognise and support students experiencing learning challenges, as evidenced by post-training evaluations compared to pre-training assessments. Teachers' pre- and post-test scores were compared using a t-test to see if there was a statistically significant change. Teachers' professional development was significantly influenced by their training, as indicated by a

regression analysis. (Blömeke & Delaney, [2012](#)) introduced the term "pedagogical knowledge" to refer to the specific expertise and abilities required to select appropriate instructional methods, manage content, and establish an effective learning environment for students. This result is consistent with their findings. This study's results align with (Shaaban & Imane, [2018](#)) findings, which indicate that proficient teacher training programmes promote the enhancement of students' inquiry strategy development. (DeWitt & Archer, [2015](#)) found that the instructional approach of a teacher is strongly linked to the academic performance of their students, as supported by previous research on effective teaching and learning practices. Our study confirms the findings of previous research by (Kent, [2004](#)), (Borko, Elliott, & Uchiyama, [2002](#)), (Quattlebaum, [2012](#)), (Hawley & Valli, [2000](#)), (Hammel, [2007](#)), (Darling-Hammond, [1998](#)) that training significantly enhances the professional development of educators. The present study corroborated the findings of previous research conducted by (Wenglinsky, [2000](#)), (Birman, Desimone, Porter, & Garet, 2000), (Guskey & Sparks, [2004](#)), (Reitzug, [2002](#)) among others. The study has limitations, including a restricted sample size and a narrow focus on a solitary institution.

Findings and Conclusion

This study highlights the necessity of providing educators with professional development opportunities to effectively address the diverse learning needs of their students. The study findings indicate that targeted training programmes enhance educators' ability to

identify and diagnose various learning difficulties. Additionally, such programmes equip them with effective strategies and interventions to cater to the diverse needs of students with varying abilities and backgrounds. This study's insights demonstrate the potential to enhance academic performance and establish inclusive learning environments for children with diverse backgrounds and abilities. Continuous professional development and training for educators are emphasised to ensure academic and personal success for all students.

Recommendations

1. Continuous professional development for teachers is necessary to support students who are facing academic challenges. Digital learning opportunities, such as online courses, seminars, and workshops, can effectively tackle distinct educational obstacles.
2. Organise regular meetings or virtual forums for educators to collaborate on strategies for supporting students with learning disabilities. Apply the knowledge acquired during the course.
3. The inclusion of case studies of academically challenged students in training curricula is recommended. Therefore, educators will comprehend the difficulties faced by these learners and consequently enhance their ability to meet their requirements.
4. Provide ongoing training to educators on efficient pedagogical methods. Teachers should stay up-to-date with industry research and best practices to utilise the most effective methods.

References

- Avalos, B. (2011). Teacher professional development in Teaching and Teacher Education over ten years. *Teaching and Teacher Education*, 27(1), 10–20. <https://doi.org/10.1016/j.tate.2010.08.007>
- Birman, B. F., Desimone, L., Porter, A. C., & Garet, M. S. (2000). Designing professional development that works. *Educational leadership*, 57(8), 28–33. https://files.ascd.org/staticfiles/ascd/pdf/journals/ed_lead/el200005_birman.pdf
- Blömeke, S., & Delaney, S. (2012). Assessment of teacher knowledge across countries: a review of the state of research. *ZDM*, 44(3), 223–247. <https://doi.org/10.1007/s11858-012-0429-7>
- Borko, H., Elliott, R., & Uchiyama, K. (2002). Professional development: a key to Kentucky's educational reform effort. *Teaching and Teacher Education*, 18(8), 969–987. [https://doi.org/10.1016/s0742-051x\(02\)00054-9](https://doi.org/10.1016/s0742-051x(02)00054-9)
- Brandon, T., & KEYES, S. (2012). *Civil courage, civil societies and good samaritans: a response to disablist hate crime: Toby Brandon and Sarah Keyes*. In *Disability, Hate Crime and Violence* (pp. 171–181): Routledge.
- Darling-Hammond, L. (1998). Teachers and Teaching: Testing Policy Hypotheses from a National Commission Report. *Educational Researcher*, 27(1), 5–15. <https://doi.org/10.3102/0013189x027001005>
- DeWitt, J., & Archer, L. (2015). Who Aspires to a Science Career? A comparison of survey responses from primary and secondary school students. *International Journal of Science Education*, 37(13), 2170–2192. <https://doi.org/10.1080/09500693.2015.1071899>
- Dilshad, M., & Iqbal, H. M. (2010). Quality indicators in teacher education programmes. *Pakistan Journal of Social Sciences*, 30(2), 401–411. https://www.bzu.edu.pk/PJSS/Vol30No22010/Final_PJSS-30-2-16.pdf
- Guskey, T. R. (2002). Professional Development and Teacher Change. *Teachers and Teaching*, 8(3), 381–391. <https://doi.org/10.1080/13540600210000512>
- Guskey, T. R., & Sparks, D. E. (2002). Linking Professional Development to Improvements in Student Learning. *Research Linking Teacher Preparation and Student Performance*, 12(11).
- Hammel, A. M. (2007). Professional Development Research in General Education. *Journal of Music Teacher Education*, 17(1), 22–32. <https://doi.org/10.1177/10570837070170010106>
- Hammond, A., & Albert, C. D. (2019). Learning by Experiencing: Improving Student Learning Through a Model United Nations Simulation. *Journal of Political Science Education*, 16(4), 441–458. <https://doi.org/10.1080/15512169.2018.1548967>
- Hawley, W. D., & Valli, L. (2000). Learner-centered professional development. *Phi Delta Kappa Centre for Evaluation, Development, and Research*, 27, 7–10.
- Kelchtermans, G., Day, C., & Sachs, J. (2004). CPD for professional renewal: Moving beyond knowledge for practice. https://kuleuven.limo.libis.be/discovery/fulldisplay?docid=lirias1784534&context=SearchWebhook&vid=32KUL_KUL:Lirias&lang=en&search_scope=lirias_profile&adaptor=SearchWebhook&tab=LIRIAS&query=any,contains.LIRIAS1784534&offset=0
- Kennedy, A. (2014). Understanding Continuing Professional development: the Need for Theory to Impact on Policy and Practice. *Professional Development in Education*, 40(5), 688–697.

- <https://doi.org/10.1080/19415257.2014.955122>
- Kent, A. M. (2004). Improving teacher quality through professional development. *Education*, 124(3), 427+. <https://link.gale.com/apps/doc/A117036570/AONE?u=anon~30ada100&sid=googleScholar&xid=7fc4cec2>
- Korhonen, V., & Törmä, S. (2014). Engagement with a teaching career – how a group of Finnish university teachers experience teacher identity and professional growth. *Journal of Further and Higher Education*, 40(1), 65–82. <https://doi.org/10.1080/0309877x.2014.895301>
- McCormick, S. T., Kurth, N. K., Chambless, C. E., Ipsen, C., & Hall, J. P. (2021). Case Management Strategies to Promote Employment for Transition-Age Youth with Disabilities. *Career Development and Transition for Exceptional Individuals*, 44(2), 120–131. <https://doi.org/10.1177/2165143421991826>
- Mulvey, R. (2013). How to be a good professional: existentialist continuing professional development (CPD). *British Journal of Guidance & Counselling*, 41(3), 267–276. <https://doi.org/10.1080/03069885.2013.773961>
- Nguyen, H. C. (2018). An investigation of professional development among educational policy-makers, institutional leaders and teachers. *Management in Education*, 33(1), 32–36. <https://doi.org/10.1177/0892020618781678>
- Owens, M. T., Trujillo, G., Seidel, S. B., Harrison, C., Farrar, K., H. Paul Benton, Blair, J. R., Boyer, K. E., Breckler, J. L., Burrus, L. W., Byrd, D. L., Caporale, N., Carpenter, E. J., Chan, Y.-H. M., Chen, J. S., Chen, L., Chen, L., Chu, D. S., Cochlan, W. P., & Crook, R. J. (2018). Collectively Improving Our Teaching: Attempting Biology Department-wide Professional Development in Scientific Teaching. *CBE-Life Sciences Education*, 17(1), ar2–ar2. <https://doi.org/10.1187/cbe.17-06-0106>
- Pill, A. (2005). Models of professional development in the education and practice of new teachers in higher education. *Teaching in Higher Education*, 10(2), 175–188. <https://doi.org/10.1080/1356251042000337936>
- Quattlebaum, S. (2012). *Why professional development for teachers is critical*. The Evolution.
- Reitzug, U. C. (2002). School reform proposals: The research evidence. *Professional development*, 235-238.
- Shaaban, E. & Abou Ali, I. (2018). The Impact of Secondary School Teachers' Training Program on the Professional Development of In-Service Biology Teachers. The Eurasia Proceedings of Educational and Social Sciences, 11, 134-141. <http://www.epess.net/en/pub/issue/40408/491202>
- Thorpe, A., & Garside, D. (2017). (Co)meta-reflection as a method for the professional development of academic middle leaders in higher education. *Management in Education*, 31(3), 111–117. <https://doi.org/10.1177/0892020617711195>
- Webb, T., Diamond-Wells, T., & Jeffs, D. (2017). Career Mapping for Professional Development and Succession Planning. *Journal for Nurses in Professional Development*, 31(1), 25–32. <https://doi.org/10.1097/nnd.00000000000000317>
- Wenglinsky, H. (2000). *How Teaching Matters: Bringing the Classroom Back into Discussions of Teacher Quality*. A Policy Information Center Report. Princeton, NJ: The Milken Family Foundation and Educational Testing Service. <http://files.eric.ed.gov/fulltext/ED447128.pdf>