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Technical Assistance and Professional Development of Teachers in the Cotabato Division

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Abstract. This study aimed to determine technical assistance as a determinant of the professional development of teachers in the Cotabato Division. The findings revealed that teachers' technical assistance regarding roles, benefits, and obstacles often manifests. Teachers usually work hard to sustain other teachers' technical assistance to be capable in the school. This was also manifested in the professional development of teachers in face-to-face learning since they rated most of the variables extensively. However, some items in the roles of technical assistant of teachers, such as informing about policies, procedures, and paperwork to teachers, and informing about school culture and expectations to teachers providing technical assistance any time during the day of learning activities online as shown in the result that they were less extensive. The teachers with the help of other teachers, there were no roles to be considered. Moreover, the teacher's professional development in terms of planning for teaching and learning and addressing student learning in the classroom was less extensive. This means the respondents could not thoroughly integrate the planning into the school. DepEd should implement programs for reskilling and upskilling teachers with curriculum heads since teachers are trying their best to educate despite the challenges they face in the classroom.

KEY WORDS

1. Teachers' technical assistance 2. professional development 3. teachers

1. Introduction

Teachers as instructional managers in the classroom, find ways to help their co-teachers carry out the teaching process, their duties and responsibilities in facilitating student learning through functional lesson plans of activities and appropriate, adequate, and updated instructional materials. Yurtseven Avci et al. (2020) stipulated that mentoring has a vital role in effective professional development, especially in mentoring Technology and Livelihood Education teachers who faced various challenges in enhancing mastery of the different skills of high school learners. The professional development of teachers is highly demanded in today's educational system. It does not particularly pertain to the certificate only achieved from seminars or even from conferences, but the outcome of how instructional coaches improved in terms of planning, time management, mastering deep knowledge about the subject matter, and flexibility for learners, especially despite their differences. Truly, a teacher without a mentor may often fail, yet to abstain from it, mentoring must be present. Technical assistance is significant to the progression of teachers' professional development. Mentoring develops a deep reflection

on a school's goals, orientation, and practices. Therefore, a mentor teacher should encourage the sharing of various aspects of the present school context and be confident enough to challenge the teachers to be receptive to different ideas, values, and beliefs. In the Division of Davao City, mentoring of teachers in secondary schools was institutionalized through LAC sessions, specifically in the technology and livelihood education area. To understand the journey of teachers and the direction it is going in providing quality education. The condition that gives rise to my research is how teachers mentoring abilities, strategies, and techniques are used in professional development to help their mentees (Gjelaj et al. 2020). The ideal situation will be the role modeling of teachers is thought to be an integral component of education, as role models inspire imitation and influence people working with them to develop new skills and achieve their potential. From this entire scenario, the researcher waseager to investigate the technical assistance of teachers to check their profess ional development in mentoring their mentees in the field and to provide an answer to some queries in secondary schools in the Davao City Division.

2. Methodology

This chapter presented the methods used in the study, which consisted of the research design, research respondents, research instrument, data gathering procedure, and data analysis. The purpose of this study was to determine the technical assistance and professional development of teachers in the public schools in the Cotabato Division.

2.1. Research Design—According to Gay (2000), the researchers used a descriptive-correlational method of analysis, which combines elements of both the descriptive and correlational types of study design. Data action for descriptive analysis can be used to verify hypotheses or provide background information about the study's subjects. However, the goal of correlational analysis is to determine the existence and strength of a relationship between two quantitative variables. The purpose of every correlational study is to find a pattern from which useful inferences may be drawn. Research on the workings of a partnership often examines a number of factors thought to be linked to one another. In this particular investigation, the researcher employed the quantitative descriptive style of research as well as the research approach of regression analysis. A subcategory of quantitative research known as descriptive research involves meticulously detailing various educational procedures (Gall, Borg, 2017).

2.2. Research Respondents—One hundred twenty (120) teachers with the longest tenure teaching different courses in public schools in the Cotabato City Division were chosen at random to participate in the study. Both inclusion and exclusion criteria were taken into account while choosing research participants. Respondents must be working with primary school students who have been provided by the Department of Education, be willing to submit themselves, and have permission from their school's administration to participate in the survey. Only respondents who knowingly and willingly gave their assent to the informed consent were allowed to continue with the survey; those who denied giving consent were disqualified. Researchers also took into account participants who dropped out of the survey process before it was finished.

2.3. Research Instrument—The questionnaire was formulated based on the data required by this study were adapted from Ganser (1993)

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and Rathke (2011) which was modified into the study and subjected to the validation of the experts. Part 1 is composed of a questionnaire related to technical assistance and indicators. Part II is composed of indicators related to professional development of teachers. Scaling was used in the analysis of the technical assistance and professional development of teachers to further check and validate the results of the study. Further, before the administration of the research instrument, pilot testing was done on selected respondents. The survey questionnaire for the pilot test was subjected to reliability testing to establish using Internal Consistency Method. The most appropriate method to use since the test contains dichotomously scored items that the examinee either passes or fails in an item. The final copy of the research survey questionnaires was validated by the panel of experts for approval. The final revisions were made by incorporating all the corrections, comments, and suggestions given by the experts before distribution and administration. The preliminary versions of the questionnaires were shown to the expert validators, who then provided feedback on each version. They were given a standardized assessment instrument that allowed them to score, remark on, and make ideas about the improvement and growth of the questionnaire. Both the findings of the validation and the preliminary version of the research instrument were given to the research adviser in order to get comments and recommendations from them. The elements that were unclear or confusing were taken out, and the ones that were lacking were bolstered and made better. The researcher was given the opportunity to complete the research instrument after having it returned to them following correction and improvement. The pilot testing was conducted in Cotabato City School, and the respondents are not included in the research survey. The pilot testing is purposely conducted to establish the reliability and validity of the test instrument. The questionnaire is designed and modified to suit the needs of the respondents. This study used an adapted and modified questionnaires. The first set was designed to draw out information concerning the level of technical assistance in teaching. The second set was designed to draw out the professional development of teachers. For the necessity of validation and comprehensive content of the instrument, the researchers sought a knowledgeable person in the field of comments and suggestions. The questionnaire used a 5-point Likert scale to determine the technical assistance of teachers. The five-point Likert scale was used in this study in describing the extent of technical assistance experienced by teachers. The following interpretations of the data was found below.

2.4. Data Gathering Procedure—The researcher underwent the following steps and procedures in gathering the data for this study: Submitting a request for approval to carry out the research. The researcher sought approval from the thesis advisor and the Dean of the Graduate School at Rizal Memorial College before beginning his research on mentorship and teacher growth. Along with the letter of support, the researcher also submitted a formal request to the Schools Division of Cotabato Division for permission to perform the study. In order to conduct his or her study, the researcher needed the approval of the school principal before getting started. Tasks involving the distribution and collection of questionnaires. After the questionnaire had been validated and reliability tested, the researcher discussed it in detail to the respondents, with the blessing of the SDS and the backing of the school administration. The researcher should observe the AITF health regulations when giving out survey surveys. Google

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Scale	Descriptive Rating	Interpretation
4.20 – 5.00	Very Extensive	The teachers' technical assistance in teaching is always manifested.
3.40 – 4.19	Extensive	The teachers' technical assistance in teaching is oftentimes manifested.
2.60 – 3.39	Moderately Extensive	The teachers' technical assistance in teaching is sometimes manifested.
1.80 – 2.59	Less Extensive	The teachers' technical assistance in teaching is rarely manifested.
1.0 – 1.79	Not Extensive	The teachers' technical assistance in teaching is not manifested.

Scale	Descriptive Rating	Interpretation
4.20 – 5.00	Very Extensive	The teacher's professional development is always manifested.
3.40 – 4.59	Extensive	The teacher's professional development is oftentimes manifested.
2.60 – 3.39	Moderately Extensive	The teacher's professional development is sometimes manifested.
1.80 – 2.59	Less Extensive	The teacher's professional development is rarely manifested.
1.0 – 1.79	Not Extensive	The teacher's professional development is not manifested.

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forms were used to manage the survey's distribution and proper URLs were sent to the responders. The researcher collected all the returned questionnaires after each responder had thoughtfully and thoroughly answered all the questions. Data collection and tabulation. Data were collected and processed once the survey questionnaires were distributed and returned. Data needed for analysis and interpretation was gathered using the proper statistical methods.

2.5. Data Analysis—In the treatment of data, the following statistical procedures were employed: Mean. This was used to answer the first two objectives of the study. More specifically, it was used to describe the technical assistance and professional development of teachers. Pearson r. This statistical tool was used to determine the significant relationship between technical assistance and professional development of teachers. Linear Regression. This statistical tool was used to determine the significant influence between technical assistance and the professional development of teachers.

3. Results and Discussion

This chapter presents the discussions of the problems in this study. They are discussed thoroughly, analyzed, and interpreted under the following headings and sequence: Teachers' technical assistance and professional development in the school.

Summary of the level of technical assistance of teachers Presented in Table 1 is the data on the summary of technical assistance of teachers. The overall mean of the data in this table is 3.62. The indicators are presented with the corresponding mean: roles (4.47); benefits (3.81); obstacles (3.61). All the indicators are with the mean descriptive equivalent of Extensive.

Table 1. Summary on Technical Assistance of Teachers

Indicators	**Mean**	**Descriptive Equivalent**
Roles	4.47	Very Extensive
Benefits	3.81	Extensive
Obstacles	3.61	Extensive
Overall mean	**3.62**	**Extensive**

The Extensive mean rating in this study suggests that teachers' technical assistance is oftentimes manifested which means that it address the professional needs of teachers coaching ability in the classroom . Aside from the obvious benefits to the mentee, a mentor also stands to learn from the experience. Mentoring is beneficial for both parties involved because the mentee can learn new information and develop their abilities while the mentor can expand their professional network. The results depicted in Table 4 are supported by the idea of Handrianto et al., (2022). This study aims to discuss two important variables in teachers' role as educators in elementary school institutions, namely mentoring and professional development. Mentoring is believed to help teachers to enhance their teaching quality and stu-

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dents' involvement. Professional development refers to teachers' skills in implementing activities in their teaching-learning process. The method used in this study is a literature review, which identifies, selects, analyzes, and synthesizes relevant previous articles or data related to the topic. The result of the study confirms that five factors contribute to implementing a mentoring strategy for teachers' professional development in elementary school, such as Teamwork approach, Teachers' attitude, Exchange of information, Continuous learning, and Teaching skills improvement. The study concludes that a mentoring strategy significantly improves teachers' professional development during their educational services. The implementation of mentoring is not limited to novice teachers, but it should be applied for all teachers as a manifestation of lifelong learning. This study confirmed the study of Ndebele and Legg-Jack (2022) on the impact of mentorship development on pre-service teachers from a university in South Africa. There was a five-factor model of mentoring, namely, personal attributes, system requirements, pedagogical knowledge, modeling, and feedback were employed as a theoretical lens. The findings support the Five-Factor Mentoring Model as a valid and useful framework for measuring the impact of the mentoring received by pre-service teachers on teaching practicum. The study concludes that mentoring activity in pre-service teacher education is an important component of professional development for effective teachers. Based on this conclusion, the study recommends that mentors support student teachers in developing the necessary skills and competencies required of a professional teacher.

Summary of the Level of professional development of teachers Table 2 shows the summary of teachers' professional development level, revealing the overall mean of 3.62. The three indicators are presented with their corresponding mean rating, namely: hardware and software, 4.08; internet skills, 4.02; and communications, 2.75. Two of these indicators have the descriptive equivalent of extensive. However, one of the indicators has a descriptive equivalent of moderately extensive.

Table 2. Summary on Level of Professional Development of Teachers

No.	Statement	Mean	Descriptive Equivalent
1	Planning for Teaching and Learning	4.04	Very Extensive
2	Addressing Student Learning in the Classroom	4.02	Extensive
3	Supporting Student Learning	3.87	Very Extensive
4	Technology for Training	4.10	Extensive
Overall Mean		**4.01**	**Extensive**

The overall mean was 4.01 or extensive, which explained that the respondents could contribute to the growth and change of the learner in the aspect of professional development of teachers in the workplace. However, teachers can improve their planning and teaching skills through professional development programs. This allows educators to spend less time on administrative tasks and more time with students. The finding conforms to the idea of Xu and Jang (2017) clarified that with increasingly advanced information and communications systems, tech-

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nology is seen as a significant agent for children's perceptual and cognitive ability growth in the new world. However, there is a longstanding concern on the effects of internet usage and video gaming on student learning success. However, research on the influence of technology on students' academic learning is inconclusive. This study examined the connections between math self-efficacy, extracurricular technology-related activities (TRAs), and math achievement in Canadian sixth graders. Using large-scale student survey and test performance results, researchers investigated the latent systemic relationship between TRAs (e.g., computer gaming, internet usage, and TV viewing) and math achievement, using self-efficacy as a mediator. Via math self-efficacy, they discovered detrimental indirect effects of TV reviewing and internet use on math achievement. The impact of the relationship between students' psychological orientations and their external digital surroundings on their academic achievement is illustrated in this report. Khanal et al. (2021), to employ digital technology in the twenty-first century, mathematics instructors must have digital awareness, including legal, cultural, leadership, and policy knowledge. This study aimed to look into the relationship between mathematics teachers' digital literacy and students' achievement from elementary to higher education levels in Nepal. The results showed that most participants possessed portable devices and had high digital literacy. Furthermore, the styles of institution and teaching level were significant determinants of digital awareness, and creating and communicating cultural implications were the most important predictors of learners' achievement. Significant Relationship between Teachers' technical assistance and professional development

Table 3 shows data about the significant relationship between technical assistance and the professional development of teachers. Analyzing the data by Pearson Product –Moment Correlation Coefficient or Pearson r, the results are as follows: the computed r-value for teachers' technical assistance versus professional development is 0.62, which denotes an almost substantial or definite relationship. While computing the significant difference of R-values, it is found as 4.41 with a probability value of 0.013, which is less than the 0.05 significance level. Hence, there is a significant relationship between technical assistance and professional development. The greater the teachers' technical assistance, the greater the teachers' professional development. Hence, a positive correlation occurs when an increase in two variables decreases simultaneously. This is a mere example of linear correlation or straight-line relationships between two variables. A correlation can range between -1 (perfect negative relationship) and +1 (perfect positive relationship), with 0 indicating no straight-line relationship.

Table 3. The Significant Relationship between Teachers' Technical Assistance and Professional Development

Variables	**r-values computed**	**t-value**	**P value**	**Remarks/Decision**
Teachers' technical assistance (x)	0.62	4.41	0.013	Reject
Teachers' professional development (y)				

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This finding is supported by Nguyen et al. (2022), who state that there is a need for professional development (PD) among Vietnamese primary school teachers. The study participants were ten teachers at ten different primary schools in a large city in Vietnam. The data included in-depth individual interviews with the participating teachers. Qualitative analysis of the interview transcripts revealed several interesting insights into the teachers' perspectives on PD, their regular PD activities, and their needs for PD. All the teachers considered PD essential for their demanding teaching job. They reported having attended various PD programs and activities provided by their schools and the Department of Education and Training at the province and district levels. They also participated in several teacher-professional learning communities available on the Internet. However, the teachers expressed a need for more PD programs and activities, especially in the context of curriculum reforms. Notably, they preferred to attend PD courses, which were more practical and relevant to their work. In addition, they highly appreciated the hands-on activities and opportunities to interact with teacher trainers and educators. This is supported by Bragg et al. (2021), that the growth in online professional development opportunities for teachers due to the COVID-19 pandemic prompts us to question what the most effective practices of facilitating professional development online are and what design elements of online professional development (OPD) programs improve teachers' content and pedagogical content knowledge (PCK). The evidence of teachers' OPD program effectiveness, including design elements, that lead to teachers' improved content knowledge, PCK, beliefs about teaching, self-efficacy, and instructional practices. Design elements identified included a focus on learner supports, further acquisition or development of PCK, engagement, flexibility, individual differences in learners and learning styles, practical learning activities, reflection, relevance, and application of knowledge and skills. The analysis uncovers a primary issue: few available publications on teachers' OPD are strong methodologically. This systematic review's findings report on design elements that lead to effective OPD learning experiences for teachers. Xu and Jang (2017) clarified that, with increasingly advanced information and communications systems, technology is a significant agent for children's perceptual and cognitive ability growth in the new world. However, there is a longstanding concern on the effects of internet usage and video gaming on student learning success. However, research on the influence of technology on students' academic learning is inconclusive. This study examined the connections between math self-efficacy, extracurricular technology-related activities (TRAs), and math achievement in Canadian sixth graders. Using large-scale student surveys and test performance results, researchers investigated the latent systemic relationship between TRAs (e.g., computer gaming, internet usage, and TV viewing) and math achievement, using self-efficacy as a mediator. Via math self-efficacy, they discovered detrimental indirect effects of TV reviewing and internet use on achievement. The impact of the relationship between students' psychological orientations and their external digital surroundings on their academic achievement is illustrated in this report.

Significant Influence of teacher's technical assistance on teachers' professional development

Table 4 depicts the regression coefficient analysis on the significant influence of teacher technical assistance on professional development in the Cotabato Division. All indicators of teacher technical assistance provided, namely roles (0.343), benefits (0.151), and obstacles (0.014), indicate a statistically significant influence on teacher professional development. The specific benefits of being mentored include being encouraged and empowered in personal de-

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velopment, being helped to identify and achieve career goals, and being helped to identify and correct gaps in generic skills and knowledge. Meanwhile, the R2 value of 0.886 suggests that the teacher's technical assistance accounts for 88.6In addition, the F-value shows all the sums of squares, with regression being the model and Residual being the error. The F-value (115.460) and F-statistic are significant p¡.001, which indicates that the model is a better predictor of teachers' technical assistance in the school.

Table 4. Regression Coefficient Analysis on Teacher's Technical Assistance that Significantly Influences the Professional Development of Teachers

Coefficients						
Model	Unstandardized Coefficients	Standard Error	Standardized Coefficients	t	p	Decision
H (Intercept)	3.356	0.056		60.083	¡ .001	
H (Intercept)	0.167	0.157		1.069	0.287	
Roles	0.095	0.090	0.100	0.949	0.043	Reject Null
Benefits	0.131	0.092	0.157	1.444	0.0021	Reject Null
Planning	0.213	0.092	0.256	2.461	0.014	*Reject Null
Technology	0.347	0.083	0.424	4.627	< .013	*Reject Null

*Significant at $p < 0.05$.

Thus, technical assistance enabled professional development. In terms of roles, benefits, and obstacles, technical assistance motivated teachers to do better in their craft. According to Cornelius et al. (2020), the similarity of teaching assignments between mentor and novice teachers was typically regarded as a necessary prerequisite for successful mentoring relationships. Yet, due to personnel shortages and specialized teaching assignments in special education, it is not always possible to match novice special educators with veteran special educators. Outcomes assessed included the intervention's impact on the mentors' special education knowledge, mentors' ability to identify needed components of special education lesson delivery, and novice teachers' improvements in instructional practice and results indicated a functional relationship between the intervention and mentor knowledge as well as the ability to identify components of specialized instruction. Most important, novice special educators improved their instructional practices after being mentored by those who received the professional development and specialized coaching. Betlem et al. (2019) explored that governments worldwide have invested in teaching standards and performance benchmarks to improve teacher preparation and teacher quality that impacts student achievement. As a means of addressing these imperatives, the Australian government has recently encouraged formal partnerships between tertiary providers, schools and education systems in delivering teacher education and profes-

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sional development, in particular for mentors. It describes designing and implementing a contextualised professional development model, using participatory action research to build teacher capacity for mentoring and foster a culture of collaborative inquiry. The model discussed reflects a systematic approach to constructing knowledge, skills and roles essential to effective mentoring. Sims et al. (2021) remarked that several influential reviews and two meta-reviews have converged on the position that teacher professional development (PD) is more effective when it is sustained, collaborative, subject-specific, draws on external expertise, has buy-in from teachers, and is practice-based.

4. Conclusions and Recommendations

This chapter discusses the research's focal points and the statistical analysis results. It also presents the conclusions and recommendations based on the study's findings.

4.1. Findings—This study aimed to determine the level of technical assistance teachers use to determine their professional development in the Cotabato Division. The findings reveal that teachers' technical assistance regarding roles, benefits, and obstacles often manifests. The result emphasizes that teachers' technical assistance activities parallel their learning goals. The teaching and learning process was properly prepared, including how it would be communicated to the learners. On the other hand, for the dependent variable, teachers' professional development in terms of planning teaching and technology is often manifested. However, technology is sometimes manifested, which emphasizes that teachers need to develop mechanisms to enhance the communication process in online classes and different modalities of teacher-learner interaction.

4.2. Conclusions—Based on the overall findings of this research, the following conclusions are drawn: The finding reveals that teachers provide extensive technical assistance in terms of roles, benefits, and obstacles. Teachers needed mentors in a way that was measurably aligned with the learning objectives and that provided learners with opportunities for interaction. Mentors could develop leadership skills and gain a sense of satisfaction from knowing they have helped someone. Mentees can expand their knowledge and skills, gain valuable advice from a more experienced person, and build their professional networks. Similarly, the teacher's professional development in terms of planning, teaching, technology, and assessment was extensive. However, communication was moderately extensive. This noted that a professional development plan provides a framework that identifies goals, resources, activities, and learning opportunities for growth. It also identifies milestones for completing goals and objectives that help you assess progress toward your desired outcomes. There was a significant relationship between teachers' technical assistance and professional development. The more effective the teachers' technical assistance, the higher the professional development of teachers; hence, a positive correlation occurs when an increase in two variables decreases at the same time. The teacher's technical assistance, in terms of roles, benefits, and obstacles, significantly influences the teacher's professional development. This teacher's technical assistance was statistically significant to the teacher's professional development.

4.3. Recommendations—In the light of the findings and conclusions, the following recommendations are offered for consideration: The Department of Education could design professional development webinars to gain technical

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assistance among teachers and school heads. Webinars on pedagogy and content could capacitate teachers with skills in performing their tasks and enriching them as they progress. In preparing for online teaching, all factors that affect curriculum delivery must be considered and addressed. School heads should monitor teachers' delivery of the curriculum. As an instructional leader, he should provide appropriate assessment and evaluation of the lesson designed by the teachers and its appropriateness to the competencies to be mastered. This would provide a clear and functional understanding of the important process of implementing teachers' mentoring and coaching skills. Teachers should provide activities aligned with the essential learning competencies and the acquisition of postgraduate studies. This involves mastering technology skills and mentoring and coaching skills. Teachers should provide a friendly learning environment that provides opportunities for novice teachers and old teachers. Lastly, a similar or comparative study exploring other indicators is suggested to find other factors enhancing teachers' professional development.

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