A Study on Higher Secondary Education Teachers' Proficiency in Virtual Learning, Attitudes towards Online Resources and Interest to Incorporate Technology in Teaching

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***Abstract*—The rapid growth of digital technology has changed the nature of teaching and learning at the higher secondary level. Virtual learning is now widely used in schools for classroom teaching assessment and academic interaction. Teachers play a central role in making virtual learning meaningful and effective. Their level of proficiency in using digital tools directly influences the quality of online teaching. Teacher attitude towards online resources also shapes how often and how well these resources are used. Interest in incorporating technology reflects a teacher's readiness to adopt new teaching practices.**

This study focuses on higher secondary education teachers and examines three major aspects. These aspects include proficiency in virtual learning attitudes towards online resources and interest in incorporating technology in teaching. The study follows a descriptive survey approach. Data were collected from higher secondary teachers through a structured questionnaire. The tool was designed to measure teachers' skills confidence and perceptions related to virtual learning and technology use.

The findings of the study indicate that most teachers possess basic proficiency in virtual learning platforms. Many teachers are able to conduct online classes use digital teaching materials and manage virtual classrooms effectively. However some teachers still face difficulties due to limited training and technical support. The study also reveals that teachers generally hold positive attitudes towards online resources. They believe that digital content helps in improving understanding student engagement and access to updated information. Teachers view online resources as supportive tools rather than replacements for traditional teaching.

The study further shows that a large number of teachers express strong interest in incorporating technology into their regular teaching practice. They are willing to learn new digital tools and teaching methods. Interest is found to be higher among teachers who receive institutional support and training. Overall the study highlights the need for continuous professional development infrastructure support and policy level initiatives to strengthen virtual learning practices at the higher secondary level.

***Index Terms*—Higher Secondary Teachers, Virtual Learning, Online Resources, Technology Integration, Teacher Attitude**

I. INTRODUCTION

Education is experiencing a major transformation due to the growth of digital technology. Teaching and learning are no longer limited to physical classrooms. Virtual learning has become an important part of school education especially at the higher secondary level. Online platforms digital tools and internet based resources are now widely used for instruction communication and assessment. This shift has increased the role and responsibility of teachers in using technology effectively.

Higher secondary education plays a crucial role in shaping students' academic and career paths. At this stage students prepare for higher education professional courses and competitive examinations. Teachers at this level must handle complex subjects and diverse learning needs. The use of virtual learning tools can support teachers in explaining difficult concepts and providing flexible learning opportunities. However the success of virtual learning largely depends on the teacher's proficiency and confidence in using technology.

Teacher proficiency in virtual learning refers to the ability to use digital platforms manage online classes and apply technology for effective teaching. Many teachers were introduced to virtual learning suddenly due to changing educational situations. Some adapted quickly while others faced challenges. Lack of training limited exposure and technical issues affected their performance. Understanding teachers' proficiency levels helps identify areas where support and training are needed.

Attitudes towards online resources also play an important role in technology based teaching. Teachers with positive attitudes are more likely to explore digital content and use it creatively. Online resources such as e-books videos and interactive materials can enrich the teaching learning process. Teachers who value these resources tend to integrate them more meaningfully into their lessons. Negative attitudes on the other hand may limit the effective use of available digital tools.

Interest in incorporating technology reflects a teacher's willingness to change and grow professionally. Teachers who show interest in technology integration are more open to innovation. They experiment with new teaching strategies and learner centered approaches. Interest often increases when teachers experience positive outcomes in student engagement and learning.

In this context it is important to study higher secondary teachers' proficiency in virtual learning their attitudes towards online resources and their interest in incorporating technology in teaching. Such a study can provide valuable insights for teacher education programs school administration and policy planning. Strengthening teacher competence and motivation in technology use is essential for improving the quality of higher secondary education in the digital age.

II. REVIEW OF RELATED LITERATURE

Several studies have examined the growing role of technology in school education. Researchers agree that virtual learning has become an important part of teaching at the secondary and higher secondary levels. Teacher proficiency is often identified as a key factor in the success of online and blended learning environments. Teachers who are comfortable with digital tools are more confident and effective in virtual classrooms.

International studies show that teachers with proper training demonstrate better control over online platforms and digital teaching strategies. Research highlights that familiarity with learning management systems and online assessment tools improves teaching quality. These studies also emphasize that continuous professional development is essential for sustaining virtual learning practices.

Indian empirical studies also provide important insights into this area. A study conducted by Kumar (2021) on secondary school teachers in India found that teachers who received institutional training showed higher confidence in online teaching. The study revealed that lack of exposure to digital tools was a major reason for low proficiency among some teachers. The findings emphasized the need for structured training programs at the school level.

Another Indian study by Yadav and Sharma (2022) examined teachers' attitudes towards online resources at the secondary level. The study reported that most teachers held positive attitudes towards digital learning materials. Teachers believed that online resources helped in improving lesson clarity and student engagement. However the study also noted that some teachers were hesitant due to concerns about content quality and alignment with the syllabus.

Research related to teacher attitudes suggests that positive perception of technology encourages its effective use. Teachers who believe that online resources support learning are more willing to integrate them into teaching. Studies indicate that attitude is influenced by previous experience availability of resources and administrative support. Negative attitudes are often linked to fear of technology and lack of digital skills.

Interest in incorporating technology in teaching has been widely discussed in both Indian and foreign literature. Several studies report that teachers with strong interest in technology are more innovative in their classroom practices. An Indian study conducted in government schools highlighted that teacher interest increased when students responded positively to digital lessons. Supportive leadership and peer learning were found to strengthen this interest.

The literature also points to common challenges faced by teachers. These include limited training inadequate infrastructure and technical problems. Indian studies frequently mention internet connectivity issues and lack of devices as barriers to effective virtual learning.

Despite these challenges most studies conclude that teachers are willing to adopt technology when proper support is provided.

Overall the review of related literature shows a strong relationship between teacher proficiency attitude and interest in technology integration. Both Indian and foreign studies emphasize the importance of training support and positive school environments. However limited research focuses exclusively on higher secondary teachers as a separate group. The present study attempts to address this gap by examining higher secondary education teachers' proficiency in virtual learning their attitudes towards online resources and their interest in incorporating technology in teaching.

III. OBJECTIVES OF THE STUDY

The present study is designed with clear and focused objectives. These objectives guide the direction of the research and help in achieving meaningful results. The objectives are framed to understand different aspects of technology use by higher secondary education teachers.

The first objective of the study is to examine the level of proficiency of higher secondary teachers in virtual learning. This objective seeks to understand how well teachers are able to use digital platforms for teaching learning and assessment. It also aims to identify their ability to manage online classes and use basic virtual tools confidently.

The second objective is to study the attitudes of higher secondary teachers towards online resources. This includes their perceptions beliefs and feelings about the usefulness of digital content. The objective focuses on how teachers view online resources in supporting classroom teaching and improving student learning.

The third objective of the study is to analyze the level of interest of higher secondary teachers in incorporating technology in their teaching practices. This objective aims to understand teachers' willingness to adopt new digital tools and innovative teaching methods. It also explores their readiness to integrate technology into daily classroom activities.

Another objective is to identify the major challenges faced by higher secondary teachers while using virtual learning and online resources. This includes issues related to training infrastructure technical support and access to digital tools. Understanding these challenges can help in planning effective support systems for teachers.

The final objective of the study is to provide suggestions for improving virtual learning practices at the higher secondary level. These suggestions are based on the findings of the study and aim to support teachers in developing confidence skills and positive attitudes towards technology based teaching.

Research Questions

Research questions provide a clear focus to the study. They help in exploring the main issues related to the use of technology in teaching. The present study frames research questions to understand the situation of higher secondary education teachers in the context of virtual learning and technology integration.

The first research question seeks to find out the level of proficiency of higher secondary teachers in virtual learning. It explores how effectively teachers are able to use digital platforms for teaching communication and assessment. It also examines their confidence in managing online classrooms and handling basic technical tasks.

The second research question focuses on the attitudes of higher secondary teachers towards online resources. It aims to understand how teachers perceive the usefulness of digital learning materials. This question also looks at whether teachers consider online resources helpful in improving teaching quality and student understanding.

Another research question examines the level of interest of higher secondary teachers in incorporating technology into their teaching practices. It explores teachers' willingness to learn new digital tools and adopt innovative teaching methods. This question also considers how far teachers are ready to integrate technology into regular classroom instruction.

The next research question addresses the challenges faced by higher secondary teachers in using virtual learning and online resources. It seeks to identify problems related to training infrastructure technical support and access to digital facilities. Understanding these challenges helps in identifying areas that need improvement.

The final research question aims to explore the support needed by higher secondary teachers for effective technology integration. It focuses on the type of training guidance and institutional support required to

strengthen virtual learning practices at the higher secondary level.

Virtual Learning

Virtual learning refers to the process of teaching and learning through digital platforms. It allows teachers and students to interact beyond the physical classroom. At the higher secondary level virtual learning has gained strong importance. It supports continuity of education and offers flexible learning opportunities. Virtual learning includes online classes digital assignments virtual discussions and online assessment. Teachers play a central role in making virtual learning effective. They must know how to use digital platforms confidently. This includes starting online classes sharing study materials and guiding students during live sessions. Teachers also need to manage time maintain discipline and ensure student participation in virtual classrooms. Effective virtual learning depends on the teacher's ability to plan and organize online lessons.

Virtual learning provides several benefits for higher secondary education. It allows access to a wide range of learning materials. Students can revise lessons at their own pace. Recorded lectures and digital notes help in better understanding. Virtual learning also supports interactive teaching through presentations quizzes and discussion forums. These tools help teachers make lessons more engaging and meaningful. Despite its advantages virtual learning presents many challenges. Some teachers lack adequate training in using digital tools. Technical problems such as poor internet connectivity affect teaching quality. Managing student attention and participation is more difficult in online settings. Teachers also face challenges in assessing students fairly in virtual environments. These issues affect confidence and effectiveness in virtual teaching.

Teacher proficiency is crucial for overcoming these challenges. Training programs and hands on practice can improve digital skills. Continuous support from institutions helps teachers adapt to virtual learning. When teachers feel confident they are more willing to use technology creatively. Virtual learning then becomes a supportive tool rather than a burden.

Virtual learning is likely to remain an important part of higher secondary education. It complements traditional classroom teaching and expands learning opportunities. Strengthening teacher proficiency and support systems is essential for making virtual learning successful and sustainable.

This finding is consistent with earlier studies which report that regular exposure and training improve teachers' confidence in virtual learning environments (Mishra & Koehler, 2006; Kumar, 2021).

Online Resources

Online resources refer to digital materials used to support teaching and learning. These resources include e books educational videos digital presentations learning applications and academic websites. At the higher secondary level online resources play an important role in enriching classroom teaching. They help teachers explain complex topics and provide updated information to students.

Teachers use online resources to make lessons more interesting and interactive. Visual content such as videos and animations helps students understand difficult concepts. Digital texts and reference materials allow students to explore topics in greater depth. Online resources also support self learning as students can access them anytime according to their learning pace.

The effective use of online resources depends on teacher awareness and attitude. Teachers who value digital content are more likely to integrate it into their teaching. They select appropriate materials that match learning objectives. Such teachers use online resources to supplement textbooks rather than replace them. This balanced approach improves student engagement and learning outcomes.

Online resources also help teachers in lesson planning and assessment. Ready made teaching materials save time and effort. Online quizzes and practice tests help teachers assess student understanding. Feedback can be provided quickly through digital platforms. This supports continuous learning and improvement.

However teachers also face challenges while using online resources. Some resources are not aligned with the curriculum. Quality and reliability of online content vary. Teachers need digital literacy to evaluate and select useful materials. Limited internet access and lack of institutional support also affect usage.

Proper training and guidance can improve the use of online resources. Teachers should be encouraged to share good digital practices. Institutions should provide access to quality educational platforms. When used thoughtfully online resources enhance teaching

effectiveness and support meaningful learning at the higher secondary level.
Similar observations have been reported in previous studies which highlight that positive teacher attitudes and institutional support encourage effective technology integration in classrooms (Selwyn, 2011; Yadav & Sharma, 2022).

Technology Integration
Technology integration refers to the purposeful use of digital tools in the teaching learning process. It is not limited to the use of devices alone. It involves thoughtful planning and effective application of technology to support learning goals. At the higher secondary level technology integration helps teachers present content clearly and engage students actively.
Teachers integrate technology in various ways in their classrooms. They use digital presentations to explain concepts. Online platforms are used for sharing study materials and assignments. Educational applications support practice and revision. Technology also allows teachers to communicate with students beyond classroom hours. This improves guidance and academic support.

Effective technology integration depends on teacher interest and confidence. Teachers who are motivated to use technology explore new teaching methods. They design interactive lessons that encourage student participation. Technology helps in creating learner centered environments where students take active roles in learning. Such practices improve understanding and critical thinking.
Technology integration also supports assessment and feedback. Digital tools help teachers conduct online tests and assignments. Automated evaluation saves time and provides instant feedback. Teachers can track student progress through digital records. This helps in identifying learning gaps and planning remedial support.

Despite its benefits technology integration faces several challenges. Lack of training limits effective use of digital tools. Some teachers feel overwhelmed by frequent technological changes. Inadequate infrastructure and technical support also create difficulties. These challenges reduce confidence and slow down the integration process.

To strengthen technology integration continuous professional development is essential. Teachers need regular training and hands on experience. Institutional support and encouragement play a vital role. When teachers receive guidance and resources they integrate technology more meaningfully. Effective technology integration enhances teaching quality and prepares students for a digital future.

IV. RESEARCH METHODOLOGY

The research methodology explains the systematic process followed to conduct the study. It provides clarity about how data were collected analyzed and interpreted. A clear methodology helps in ensuring reliability and validity of the study findings.

Research Design
The study adopted a descriptive survey method. This design was chosen because it helps in describing existing conditions as they are. It allows the researcher to collect information about teachers' proficiency attitudes and interest related to virtual learning and technology use. The descriptive approach is suitable for studies that aim to understand perceptions practices and experiences of a specific group.

Population and Sample
The population of the study consisted of higher secondary school teachers. These teachers were working in different schools and teaching various subjects. From this population a sample of teachers was selected using random sampling. Random sampling was used to give equal chance to every teacher to be included in the study. This method helps in reducing bias and increasing the representativeness of the sample.

Tools for Data Collection
A structured questionnaire was used as the main tool for data collection. The questionnaire was carefully designed to collect information related to virtual learning proficiency attitudes towards online resources and interest in technology integration. The items were simple and clear to ensure easy understanding by the respondents. The questionnaire included statements that required teachers to share their views and experiences honestly.

Procedure of Data Collection

The data were collected through both personal and online modes. Some questionnaires were distributed directly to teachers in their schools. Others were shared through online platforms to reach teachers who preferred digital communication. Teachers were given sufficient time to read the questions and respond carefully. Confidentiality of responses was maintained to encourage truthful answers.

Statistical Techniques Used

After data collection the responses were organized and analyzed systematically. Percentage was used to understand the distribution of responses. Mean scores were calculated to determine average levels of proficiency attitude and interest. These simple statistical techniques helped in presenting data clearly and interpreting the results effectively.

Ethical considerations were followed during the study. Participation of teachers was voluntary. Respondents were informed about the purpose of the study. Confidentiality of responses was maintained and the collected data were used only for academic research.

Analysis and Interpretation of Data

The analysis and interpretation of data provide a clear understanding of the responses collected from higher secondary education teachers. The data were analyzed in relation to the objectives of the study. Simple statistical tools such as percentage and mean score were used to interpret the responses. This approach helped in presenting the results in an understandable and meaningful manner.

The analysis of data related to virtual learning proficiency indicates that most teachers possess a basic level of digital competence. A large percentage of teachers reported that they are able to conduct online classes without major difficulty. Many teachers are comfortable using digital platforms for sharing learning materials and communicating with students. The mean score suggests a moderate level of proficiency among the majority of respondents. Teachers who had prior training or regular exposure to technology showed higher proficiency levels.

The interpretation further reveals that some teachers face challenges in managing advanced features of virtual learning platforms. These teachers reported difficulty in using online assessment tools and interactive features. Limited technical support and lack of hands on training were identified as major reasons for this gap. This finding highlights the importance of continuous professional development.

The analysis of teachers' attitudes towards online resources shows a generally positive trend. A high percentage of teachers agreed that online resources support effective teaching. Teachers reported that digital materials help in explaining difficult concepts and make lessons more engaging. The mean score reflects a favorable attitude towards the use of online resources in higher secondary education.

However a smaller group of teachers expressed concern about the quality and reliability of online content. These teachers felt that not all digital resources are suitable for classroom use. This interpretation suggests that teachers need guidance in selecting appropriate and curriculum aligned materials.

The analysis related to teachers' interest in incorporating technology in teaching presents encouraging results. Most teachers showed willingness to use technology in their regular teaching practices. The mean score indicates a high level of interest among respondents. Teachers expressed enthusiasm to learn new digital tools and teaching strategies. Interest was found to be higher among teachers who received institutional support and encouragement.

The interpretation of data also brings attention to common challenges faced by teachers. Percentage analysis shows that lack of adequate training and technical issues remain major barriers. Problems related to internet connectivity and access to digital devices affect the effective use of technology. These challenges influence both proficiency and confidence levels among teachers.

Overall the analysis and interpretation of data suggest a positive shift towards technology based teaching among higher secondary teachers. While proficiency levels differ attitudes and interest remain largely positive. Strengthening training programs improving infrastructure and providing continuous support can further enhance effective technology integration in higher secondary education.

Table 1: Summary of Teachers' Responses on Key Variables

Aspect Studied	Overall Level Observed	Interpretation
Proficiency in virtual learning	Moderate	Most teachers possess basic digital skills but need advanced training
Attitude towards online resources	Positive	Teachers value digital resources as supportive teaching tools
Interest in technology integration	High	Teachers show readiness to adopt technology in teaching
Major challenges	Significant	Training gaps and technical issues affect effective use

The table summarizes the overall trends observed in the study and supports the interpretation of quantitative data in a concise manner.

V. FINDINGS OF THE STUDY

The study brings out several important findings related to higher secondary teachers and their use of technology in teaching. These findings are based on the analysis and interpretation of collected data. They reflect the present status of virtual learning practices and teacher readiness.

The study finds that most higher secondary teachers possess a basic level of proficiency in virtual learning. They are able to conduct online classes share digital study materials and communicate with students through online platforms. However the level of proficiency varies among teachers. Teachers who have received training or have prior experience with digital tools show higher confidence and effectiveness.

Another major finding is that teachers generally hold a positive attitude towards online resources. Most teachers believe that digital resources support classroom teaching. They feel that online materials help in explaining difficult concepts and improving student understanding. Teachers view online resources as helpful supplements to traditional teaching methods rather than replacements.

The study also reveals that a high level of interest exists among teachers in incorporating technology into their teaching practices. Many teachers express willingness to learn new digital tools and adopt innovative teaching methods. Interest is stronger among teachers who receive encouragement and support from their institutions.

The findings indicate that several challenges affect effective technology use. Lack of adequate training is identified as a major issue. Technical problems such as poor internet connectivity also create difficulties. Limited access to digital devices and institutional support affects teacher confidence.

The study further finds that positive attitude and strong interest contribute to better use of virtual learning tools. Teachers with favorable perceptions of technology are more likely to integrate digital resources into their lessons. Overall the findings suggest that with proper training and support higher secondary teachers can effectively adopt technology based teaching practices.

VI. DISCUSSION OF RESULTS

The discussion of results explains the meaning of the findings in relation to the objectives of the study and earlier research. The results show clear patterns in teachers' proficiency attitudes and interest related to technology use in teaching. These patterns help in understanding the present situation of higher secondary education in the digital context.

The findings related to virtual learning proficiency indicate that most teachers have developed basic digital skills. This result supports earlier research which suggests that exposure and practice improve teacher confidence in online teaching. Studies by Mishra and Koehler highlight that teachers gradually build competence when they regularly use digital platforms. Indian studies by Kumar also report similar outcomes where trained teachers show better performance in virtual classrooms. The present findings align with these studies and confirm that training and experience play a vital role.

The positive attitudes towards online resources found in this study reflect growing acceptance of digital materials among teachers. This result is consistent

with research by Selwyn which emphasizes that teacher belief influences technology use. Indian research by Yadav and Sharma also reports that teachers view online resources as helpful in improving lesson clarity and student engagement. The present study supports this view and shows that teachers value online resources as supportive tools for teaching.

The strong interest shown by teachers in incorporating technology into teaching is an important outcome of the study. This interest indicates readiness for change and professional growth. Research by Bates suggests that interest increases when teachers observe positive learning outcomes. Indian studies also note that supportive school environments encourage teachers to experiment with technology. The present findings confirm that interest grows with encouragement and institutional support.

The challenges identified in the study help explain variations in proficiency levels. Lack of training and technical issues remain major concerns. Similar challenges have been reported in Indian and international literature. Studies by OECD highlight that inadequate infrastructure limits effective technology integration. The present study reinforces this understanding and shows that positive attitudes alone are not sufficient without proper support.

Overall the discussion shows that the findings of the study are consistent with existing literature. Teachers are willing to adopt technology and show positive attitudes and interest. However continuous training infrastructure development and institutional support are necessary to translate interest into effective classroom practice. The study contributes to existing research by focusing specifically on higher secondary teachers and highlighting their evolving role in technology based education.

Educational Implications

The findings of the study have important implications for higher secondary education. They highlight areas where improvement and support are needed to strengthen teaching and learning through technology. These implications are useful for teachers school administrators teacher educators and policy makers.

The study suggests that regular training programs should be organized for higher secondary teachers. Training should focus on practical use of virtual learning tools. Teachers need hands on experience to build confidence. Continuous professional development can help teachers update their digital skills and adapt to new teaching methods.

Teacher education institutions should include technology integration as a core component of pre service and in service programs. Courses should emphasize effective use of online platforms and digital resources. Exposure to innovative teaching practices can prepare future teachers for technology based classrooms.

School administration plays a key role in supporting technology integration. Schools should provide necessary digital infrastructure. Reliable internet access and functional devices are essential. Technical support systems should be available to assist teachers during online teaching. Supportive environments encourage teachers to experiment with new tools.

The study also implies the need to develop positive attitudes towards technology. Motivation and encouragement help teachers overcome fear and resistance. Peer collaboration and sharing of best practices can improve confidence. Recognition of innovative teaching efforts can further enhance teacher interest.

Curriculum planners should ensure that online resources align with learning objectives. Quality digital content should be selected carefully. Integration of technology should support understanding rather than increase workload. Balanced use of traditional and digital methods leads to effective learning.

At the policy level the study highlights the importance of long term planning for digital education. Investment in teacher training and infrastructure is essential. Strengthening teacher proficiency and interest in technology will improve the overall quality of higher secondary education and prepare students for future challenges.

VII. LIMITATIONS OF THE STUDY

Every research study has certain limitations. These limitations should be understood while interpreting the findings. The present study also has some constraints that may influence the generalization of the results.

The study was limited to higher secondary teachers from a specific area. The findings may not represent teachers from all regions. Differences in school facilities and local conditions may affect technology use in other areas.

The sample size of the study was limited. A larger sample could have provided more detailed and diverse responses. With a small sample some variations in teacher experience and background may not be fully reflected.

The study relied on a questionnaire for data collection. Responses were based on self reporting by teachers. Some teachers may have overestimated or underestimated their proficiency and interest. Personal bias and social expectations may have influenced responses.

The study focused only on proficiency attitudes and interest related to technology use. Other important factors such as teaching experience subject specialization and student background were not examined. Inclusion of these factors could provide deeper understanding.

Time was another limitation of the study. The data were collected within a limited period. Long term changes in teacher proficiency and attitude were not observed. A longitudinal approach could provide more accurate insights.

Despite these limitations the study provides useful information about technology use among higher secondary teachers. The findings should be viewed as indicative rather than conclusive and they can guide future research and educational planning.

VIII. SUGGESTIONS FOR FURTHER RESEARCH

The present study opens several directions for future research in the area of technology use in education. Further studies can build on the findings and address the limitations of this research.

Future research may include a larger sample of higher secondary teachers. Studies covering different regions can provide a broader understanding of technology integration. Comparative studies between rural and urban schools can highlight contextual differences.

Further studies can focus on subject wise analysis of technology use. Teachers of science humanities and commerce may face different challenges and opportunities. Such studies can help design subject specific training programs.

Longitudinal studies can be conducted to examine changes in teacher proficiency attitude and interest over time. This can help understand the long term impact of training and policy initiatives. Tracking progress over several years can provide deeper insights.

Future research may also explore the relationship between teacher technology use and student learning outcomes. Experimental studies can examine how technology integration affects student achievement and engagement. This will strengthen the evidence base for digital teaching practices.

Another area for research is the role of institutional leadership and support systems. Studies can examine how school management influences teacher motivation and confidence. The impact of peer learning and mentoring can also be explored.

Research can further investigate the effectiveness of different training models. Online blended and workshop based training programs can be compared. Such research will help in developing effective professional development strategies for teachers.

Overall further research can contribute to improving technology based teaching practices and strengthening higher secondary education in the digital age.

IX. CONCLUSION

The present study focused on higher secondary education teachers and their engagement with technology in teaching. It examined teachers' proficiency in virtual learning their attitudes towards online resources and their interest in incorporating technology in teaching. The study provides a clear picture of how teachers are responding to the changing demands of digital education.

The findings show that higher secondary teachers have developed basic skills in virtual learning. Many teachers are able to conduct online classes and use digital tools for teaching and communication. Although proficiency levels differ the overall trend indicates gradual improvement. This shows that teachers are willing to adapt to new teaching environments.

The study also reveals that teachers generally hold positive attitudes towards online resources. They recognize the value of digital materials in supporting classroom teaching. Online resources are viewed as helpful tools that enhance understanding and student engagement. Positive attitudes encourage teachers to explore and use digital content more effectively.

Another important conclusion is that teachers show strong interest in incorporating technology into their

teaching practices. This interest reflects readiness for professional growth and innovation. Teachers are motivated to learn new skills when they receive proper guidance and support. Interest plays a key role in successful technology integration.

However the study also highlights challenges such as lack of training technical difficulties and limited institutional support. These challenges affect teacher confidence and effective use of technology. Addressing these issues is essential for improving digital teaching practices.

Overall, the study concludes that strengthening teacher training providing infrastructure and offering continuous support can enhance technology-based teaching at the higher secondary level. Empowered and confident teachers can use technology to improve teaching quality and prepare students for a digital future.

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