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# An Exploratory Study on Virtual Learning: With Special Reference to Teacher Professional Development

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## Abstract:

*Virtual Learning is both a methodical approach to learning online, and the blending of andragogy and pedagogy in their online form, incorporates technology in immersive 3D virtual environment, augmented reality and cyberspace learning. Its increased accessibility, interaction, self-paced learning, collaborative experience, adaptability, evaluation potential, and ease of technology integration makes learners able to move through the content at their own pace. Present study aims at understanding the role of Virtual Learning in Teacher Professional Development and highlighting the key components that Tech Savvy Teachers must use to develop an interesting learning. The study draws on secondary data from over the world, using a literature review and document analysis to ground the study. The success of Virtual Learning is shown in this study as the result of the use of technology tools and teaching methods in the creation of engaging and inclusive digital learning programmes. Virtual Learning integration into teacher professional development promotes Virtual Learning throughout a teacher's lifelong learning, adaptability, and gets the teachers ready to navigate an ever-changing educational environment. Assessment and modification, cognitive traits, and struggles related to changing teaching practice all suggest that effective learning is centered on assessment and the modification of teaching practice.*

**Keywords:** *Virtual Learning; Engaged Learning; Professional Development; Paradigm Shift.*

## 1. Background of the Study:

Virtual Learning is a methodology of both pedagogy and andragogy. Through the use of information technology in this instructional design methodology, Wang et al. (2006) created his methodology that encourages both self and supported learning. It covers e-learning and online education; and instructional techniques or strategies utilizing technology means. As shown, this approach is integrated into cyberspace learning, augmented reality, and immersive 3D virtual worlds for teaching, learning, and collaboration.

Virtual learning has numerous applications, such as expanded access, improved engagement, self-paced learning, team-based learning, flexibility, assessment capabilities, delivery of a pedagogical plan, and seamless technological integration. The curriculum is accessed by the learners anytime and anywhere and they can take part in interactive activities using multimedia



and other technology resources. This finally allows people to follow the content at their own speed and then to insert in their group projects, peer reviews, and social media.

## 2. Review of Related Literature:

Adnan (2018) points out the need for online instructors of professional development training, pedagogical support, mentoring, and ongoing development. Online delivery requires pedagogical skills that many instructors currently lack, including online instructional design, facilitation techniques, assessment strategies and, of course, technology use. Necessary for one's comfort while taking online learning classes. Peer support as well as mentoring programmes is also important. The transition to teaching online is an ongoing process and requires an all-encompassing approach of addressing pedagogy, technical and social. Thus, an important aspect of successful professional development programmes is an emphasis on the perspective of the instructor.

According to Carrier and Moulds (2003), there is a shift they suggest andragogical principles in online learning to accommodate adult learners better. They distinguish between pedagogy and andragogy—with the latter leaning on learner autonomy and experience. This approach highlights the consideration of andragogical principles in creating online course design, for example: the autonomy of the learner, prior experience, relevance, and problem-based learning, and the motivation. But they understand that challenges include learner isolation as well as the need for interaction and building community among learners. Research into alternative pedagogical and andragogical approaches is also called for, as well as development of best practice recommendations for online teaching and learning.

Catalano (2014) looks at blended learning in adult education and how it allows flexibility, convenience, better learning experience, higher levels of learner engagement, saves cost and allows increased access to learning resources. Yet the article notes the challenges, technical requirements, utilization of digital literacy, handling of careful design and planning, trainer training, and sustaining the motivation of the student. This case study presents practical insights and examples on the blended learning training programme in adult education. The article highlights that careful planning, design, implementation of the blended learning programmes can make its benefits must and can address its challenges. In general, blended learning holds great potential for adult education, however there are important questions about the technical requirements, instructional design, the preparation of instructors, and strategies to support motivation of learners.



Hamedinasab, Ayati, and Rostaminejad (2023) conducted a study on teachers' professional development (TPD) in virtual social networks (VSNs) through a grounded theory. Informal learning is contrasted with formal TPD programmes, and the research focuses on them. Patterns identified considered key patterns to include shared knowledge, community building, reflective practise, collaborated problem solving, and access to information and resources. Trust and Psychological Safety, as well as Active participation and engagement and moderator and facilitator effectiveness impact on TPD effectiveness. The findings suggest that VSNs may be a useful tool to promote ongoing teacher professional development and recommend that teacher education programmes and policy makers pay attention and exploit their capacity to promote informal learning and teacher collaboration.

The Use of 3D Immersive Virtual worlds is explored by Scopes (2011) as a means to improve learning experiences. Specifically, it focuses on the unique characteristics of 3DIVWs, including Second Life, and uses learning archetypes<sup>1</sup> (experiential learning, collaborative learning, and inquiry-based learning) to design effective activities to create learning opportunities. The article also analyses various learning domains as cognitive, affective, and psychomotor, as well as how 3DIVWs are used to address each. Practical pedagogical approaches for 3DIVWs, such as embodied learning, social interaction, simulation, immersive exploration, are offered in the article. The article helps close the gap between theoretical learning frameworks and concrete application, presenting useful advice to educators on how to use this virtual environment in the best possible way for learning.

The integration of blended learning into a virtual learning paradigm is discussed by Mihaela Muresan (2013). Specially blended learning refers to where online components are deliberately combined with the traditional classroom assignment. It has the advantage of flexibility, accessibility, better learning experience, greater interaction and collaboration, personalized learning and better learning outcomes. Integrating such activities online and offline; selection of appropriate technologies and tools; and trainer training and support are necessary to design and implement effective blended learning systems. This article points in how online learning is only effective when combined with face-to-face learning.

Scott et al. (2012) investigate virtual learning environments generally, and specifically virtual worlds, as a framework for teaching design students. Thus, they provide unique opportunities for design education that traditional methods might not provide. Virtual Life can create a 3D space

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<sup>1</sup> Learning Archetypes : Discovering knowledge and oneself through archetypes is a way of learning, namely archetypes are universal prototypes or ideas. Instincts and archetypes can serve to organise, direct, and inform human thought and behaviour; and they are a part of the collective unconscious.



for students on the other end of the spectrum to experience and interact within a design in a more immersive and interactive way than traditional 2D tools. The authors situate virtual learning within these worlds as a broad framework, tying together multiple pedagogical approaches and learning activities designed for design education. For design students, spatial understanding is enhanced, creativity and innovation are increased, collaborative skills are developed, and students became more prepared for professional practice.

From a transdisciplinary point of view Sumarsono (2019) discussed the connection between heutagogy<sup>2</sup> and virtual learning. Virtual learning environments (i.e. those mediated by the Internet) can support self-directed learning through providing multiple resources, flexible pathways through learning, opportunities for collaborative learning, and self-reflection. This article is transdisciplinary in its view, blending knowledge from different disciplines to enliven the learning experience. The combination of heutagogy and the virtual learning environment combines to let educators construct learning environments that lend a hand to learners to assume accountability for his or her studying, increase considering talents, and got be lifelong scholars. Finally, the implications for educational practice are discussed in the article.

In emphasizing the role of virtual learning environments (VLEs) in delivering engaged learning, Wang and Kang (2006) argue. Information and Communication Technology (ICT) framework for the writer engagement of learners is proposed by them. Engaged learning is a cognitive, behavioural and emotional process. Interaction, collaboration, authenticity, personalization, motivation, active learning strategies and clear learning objectives and feedback are among the framework components. But VLEs can be used to enable active, meaningful learning if they are well designed. Besides providing clear objectives and regular feedback, ICT can afford interaction, collaboration and personalization. As a whole however, VLEs have the potential to be a powerful resource for enabling active and meaningful learning.

In line with Zufadhli et al. (2022) who talk about the adoption of off-campus learning as a new paradigm in language education, we discuss the gradual shift towards virtual learning. It is a paradigm that has been adopting in technology use, flexible learning environment, and leaning autonomy. Against this backdrop, the COVID-19 pandemic has fast tracked this change, with educators and learners both adapting to new technologies. According to the research, this new

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<sup>2</sup> Heutagogy: The heutagogy is a learner centred approach, based on self-directed learning with autonomy and capacity development. Heutagogy has some key characteristics—learner-initiated learning, self-reflection, double loop learning, and a negotiated curriculum.



paradigm requires the concept of 'cybergogy'<sup>3</sup> to function as a funding framework, which stresses learner centered approaches, technological integration and collaboration. The application of virtual language learning is associated with five 21st century skills of flexibility, communication, collaboration, critical thinking, creative and literate in the digital media. This also discusses blended learning as a possible model for future language education.

### 3. Research Gap:

These related literatures emphasize the importance of online instructors receiving pedagogical support, mentoring, and ongoing development. Online delivery requires skills like online instructional design, facilitation techniques, assessment strategies, and technology use. Peer support and mentoring programs are crucial. It also suggests andragogical principles in online learning, emphasizing learner autonomy, prior experience, relevance, problem-based learning, and motivation. This review explores blended learning in adult education, highlighting its flexibility, convenience, and benefits. Studies highlight the importance of shared knowledge, community building, and collaboration in virtual learning environments. There is a need for more study on the importance of virtual learning for teacher professional development and 'engaged learning'. Hence, this present study aims to focus on these aspects and the researcher made the objectives accordingly.

### 4. Objectives:

- (i) To identify the effective factors of Virtual Learning needed for 'Engaged Learning'.
- (ii) To study the importance of Virtual Learning for Teacher Professional Development.

### 5. Research Questions:

- (i) What are the effective factors of Virtual Learning needed for 'Engaged Learning'?
- (ii) What are the importances of Virtual Learning for Teacher Professional Development?

### 6. Methodology:

This present research is totally based on Secondary Data as evidences found worldwide to justify those objectives. Rigorous review of related literatures followed by Document Analysis related with the National Education Policy 2020 made this research report enriched.

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<sup>3</sup> Cybergogy : The word cybergogy describes the principles and practises of teaching and learning in an online or virtual environment. It is a blend of pedagogy (art and science of teaching) and andragogy (art and science of adult learning) and adapted for the digital age.



## 7. Data Analysis and Discussion:

### 7.1 Analysis and Discussion of the Objective 2.1:

#### To identify the effective factors of Virtual Learning needed for 'Engaged Learning'

A number of factors determine the success of Virtual Learning in digital environment. These characteristics aid in creating an immersive, captivating, and learner-directed experience that fosters cooperation, critical thinking, and information retention.

#### 7.1.1 Cognitive Factors:

- (i) **Knowledgebase:** There are many virtual classes require students to have a wide range of understanding for different material levels, something that does not allow students to consciously absorb the new content that they are exposed to. Teachers need to research students' understanding and then create the appropriate resource.
- (ii) **Goal Orientation:** Internally and externally driven, students have many aspirations for success. To provide quantity and quality chances in addition to mastery opportunities, teachers should offer quantity and quality chances such as discussion boards, tests and assessments.
- (iii) **Pedagogical Activities:** Online courses should support different types of learning activities for students (reading, video, podcasts, quizzes, writing assignments, discussion boards, group projects, shared documents and real time video conferencing) depending on what each student need from a mentor.
- (iv) **Study Habit:** In classroom, students take different learning and comprehension styles, based on their preferred methods of learned. The introduction of multimedia into education and alternative activity types will help to specialize in different techniques.

#### 7.1.2 Social Factors:

- (i) **Personal Qualities:** Online learners need to be self-motivated, computer proficient and self-directed to accomplish objectives, to engage in activities, to manage time, to plan and recognize their progress.
- (ii) **Virtual Community:** This helps the instructor facilitate endless engagement in a dialogue that is continuously communicative. The instructor achieves that through virtual group conversation, allowing online students to collaborate on the same material, to co create and to support one another.



(iii) **Multimedia:** In contrast, improved technology such as graphic, audio visual and information technology can be used to develop and take advantage of social network, email, discussion board, chat tools and video conference for instructional personnel and students to have regular and immediate connections.

### 7.1.3 Emotive Factors:

Virtual Learning strategies capitalize on the use of technology and interaction to keep students engaged and removed from isolation. They create community and relationship though distance and face to face settings promoting self-motivation and flexibility. In virtual learning, emotional relationships between teachers and peers are key, discussion board, and video conferencing capabilities are their effective tools. The principles of well-being, as well as reasonable workload and compassionate approaches, can address stress, anxiety, information overload and burnout, too, which all are important with regard to student engagement. The Virtual Learning success is tied to the integration of technological tools with teaching methodologies in a responsive enabling cyberspace learning environment that is socially inclusive, engenders engaged learning that promotes meaning, involving relevant meaningful learning experiences.

## 7.2 Analysis and Discussion of the Objective 2.2: To study the importance of Virtual Learning for Teacher Professional Development:

Using digital platforms and technology, instruction methodology referred to as 'virtual learning', engages students by providing them with opportunities to interact and modifying the learning environment. Virtual learning is used through digital resources in the framework of teachers' professional development as a means to enhance engagement, support with instructional practice, and to promote lifelong learning. For this reason, virtual learning must include continuous sessions for instructors' professional development. Success of virtual processes requires consistent and professional growth in teacher training and supervision, and in the utilization and supply of exceptional online education in integrated virtual learning processes.

### (i) Blended and Collaborative Learning Opportunities:

Blended learning is a method through which teachers experience blended learning; that is, the combination of face-to-face methods and virtual teaching. In particular, this is especially beneficial for those educators who are tasked with using technology in their own classrooms. Besides, forum of all online communities, discussion forums, and social media groups let teachers get in touch and share their ideas, helping them to combat challenges together.



Through these virtual networks, peer learning and mentorship occur and best practices are shared within a variety of educational contexts.

**(ii) Development of Digital Literacy:**

Using this strategy means teachers can experience a blend of in person instruction and online learning, which is acting as blended learning. For teachers that have to integrate technology into their own classrooms, this is especially helpful. In addition, discussion boards, social media groups and forums for any online community gives educators a place to connect and share the ideas with each other, not just alone. These virtual networks are used for peer learning, or mentorship, or the sharing of best practices in a range of educational environments.

**(iii) Pedagogical Design:**

Any of the activities in cyberspace usually demand a breakdown of activities to the last detail possible. And thus, the central attention of this paper is on how educators use teaching to justify pupils' involvement, coordination, and participation in this process of learning. This high-quality instruction relies on multimedia and project-based tasks such as online collaborative projects, live online courses, and self-paced tasks.

**(iv) Assessment and Accessibility:**

Some of the efficient assessment technique that teachers can adopt is based on the application of cyber learning model are tests or quizzes, assignments, conversations and peer evaluation. The reason is because in an online learning context, students and teachers also greatly rely on a correct grading system and a fast feedback mechanism.

Fairness in access to online learning resources and opportunities is one of the demandable principles concerning cyber learning and teachers must practice it to strengthen their professional ability. This involves ensuring that students from low socioeconomic backgrounds, disabled students and marginalized pupils have the appropriate technology and internet as well as support for their preferred learning style. Integration of virtual learning in teacher professional development ensures educators' adaptability, life time learning, and preparedness for success in an ever-changing educational environment. Virtual learning through digital tools enables the trainer to remain innovative and effective teacher.

## **8 Findings:**

Virtual learning is a proper student focused, simulated teaching so that teachers and students learn how to become whizzes of the digital age. Many qualities human traits such as resilience, creativity, and flexibility are developed through the development of cognitive, emotional, and social connections as well as the increased performance in academics. Through virtual praxis,





instructors can experiment with new digital tools as part of their professional development, and create innovative teaching methods in their classrooms.

- (i) Data-Driven Reflection: Learning analytics can help teachers to improve their performance and progress by way of insights that provide opportunities for reflective practice.
- (ii) Technological Integration: This means that when deploying virtual schooling, teachers are expected to be conversant in how technology can be learned effectively. Thus, on the one hand it involves selecting suitable technology and media in the process of enhancing the teaching and learning process (such as multimedia tools, video conferencing, and learning management system), and on the other, improving the learning experience of students.
- (iii) Pedagogical Adaptation: Virtual learning is a process of modifying teaching methods as accorded to existing learning environments. To having students, participate in the learning processes in a virtual environment, as well as working in teams and groups without being present in physical space, and to build knowledge, teachers and instructors need to create content and assignment types.
- (iv) Interaction and Engagement: Consequently, cyber pedagogy takes one of its main tenets as encouraging very active classrooms. Virtual simulations and cooperative tools can be used by teachers to engage students in each other by having virtual talk. Incorporating multimedia, and putting the material into practice can facilitate improving student engagement as well as boost effectiveness of knowledge acquisition.

## 9 Conclusion:

Virtual Learning is a redefinition of teaching and learning paradigms, which focuses on participation, interaction and flexibility. The process involves the use of technological ways of building a responsive online space for students. To be effective, learning has to be assessed and could be modified continuously. Teacher professional development is also focused on virtual learning, to be ready in educating through a rapidly changing landscape. It makes it easy for educators to craft interactive, natural, instinctual, cooperative, self-directed learning scenarios.

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