

**Effectiveness of Modular Object-Oriented Dynamic
Learning Environment Based on Curriculum
Development of B.Ed. Students in Terms
of Achievement and Reaction**

**Pre-Submission Presentation
for the degree of Doctor of
Philosophy in Education**

Supervisor

Dr. Laxman Shinde

Research Scholar

Yogita Kamal

RESEARCH CENTRE

SCHOOL OF EDUCATION

DEVI AHILYA VISHWAVIDYALAYA, INDORE

Institute of Advanced Studies in Education (IASE)

(Accredited with Grade A+ by NAAC)



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Summary

1.0.0 INTRODUCTION

In the ever-evolving landscape of education, technology has revolutionized the way we approach teaching and learning. One such transformative tool is Moodle, a widely adopted Learning Management System (LMS) that has gained prominence in various educational settings. This research embarks on a critical exploration of the effectiveness of Moodle in the context of Curriculum Development, with a particular focus on its impact on the academic achievement and reaction of Bachelor of Education (B.Ed.) students.

Curriculum development is a pivotal aspect of the education process, and the digital age has ushered in new opportunities to enhance this process. Traditional methods of curriculum design and delivery are now being supplemented, and in some cases, replaced by digital platforms like Moodle, which offer a range of resources and interactive features. This study seeks to address the fundamental question: To what extent does the integration of Moodle into Curriculum Development influence the academic achievements and reactions of B.Ed. students?

To answer this question, the research will delve into various dimensions, including the implementation of Moodle as an instructional tool, the perceptions and reactions of B.Ed. students towards this technology, and the measurable impact on their academic performance. By undertaking this comprehensive investigation, we aim to contribute valuable insights to the field of educational technology and curriculum development, shedding light on the potential benefits and challenges associated with the integration of Moodle. These findings have the potential to inform educators, institutions, and policymakers, aiding them in making informed decisions about the use of Moodle in Curriculum Development and its implications for student learning outcomes.

1.1.0 RATIONALE

It is a fact that technology surpasses the things in every field in various forms which helps in better understanding and development. Technology has become an integral part of everyone's life in academics as well as in daily life. It is now necessary that teacher should use the technology in teaching in the form of ICT, e-content development, development of MOOCs, development of innovative practices, designing new curriculum and courses, as these all allotted some weightage for their promotion, as per the UGC Regulation 2018, part III. So, it is



very important for the teachers to engage themselves in such technological activities to boost their academic performance and enhanced output in terms of student achievement. For this MOODLE is one of the important online Learning Management System (LMS) that can be included in teaching to upgrade the performance. The use of this LMS came into rapid existence due to its features which can overcome the limitation of classroom teaching. Because classroom teaching requires a fixed place, specific time with lack of student interest whereas MOODLE provides flexibility for time and place as well as focuses on the betterment of individual performance via, giving a wide range of activities for content and different mode of interactions among students and between teacher-student through a forum. In other words, it can be said that MOODLE is user friendly and the easiest mode of learning online for both first and second generation of students, as they have a different medium of instructions, locality, etc. Besides this, it gives different evaluation alternative such as Blind checking, which result in the unbiased marking, and teacher can track all the records of learner individually and can pay attention towards each student.

Also, the core of teaching is socially oriented and Higher education makes students become better teachers for society. That means education depends on the need of society and today's society is extremely dependent on the internet for online learning due to pandemic circumstances. Such type of situation can only be overcome by using online learning in academics. MOODLE makes it very easy to facilitate the whole course at one click with a variety of interesting activities, assignments, and discussion. It makes the active participation of students and encourages them to share their created knowledge with others; it increases the problem-solving ability, reasoning ability which leads to an increase in the confidence level of the student. All these reasons make the researcher in deep study of the present research on MOODLE as the research topic.

On reviewing the above studies fewer number of researches were found on the effectiveness of MOODLE that were done by Salhab (2019) on attitudes of faculty members at PTUK university towards MOODLE; Yafaei and Attamimi (2019) on implementation of MOODLE by Omani English language teachers; Sonmez and Mustafa (2018) on experiences of pre-service teachers taking a course through MOODLE; Khoza (2016) on managers reflections on their use of visions of MOODLE for curriculum management; Stasinakis and Kalogiannakis (2015) on MOODLE at secondary level in Greece; Oproiu (2014) on MOODLE in University teaching process; Chourishi, Buttan, Chaurasia, and Soni (2012) on exploring the implementation of effective E-learning through MOODLE at various colleges; Wood (2010) on Technology for Teaching and



Learning: MOODLE as a Tool for Higher Education; Wood (2010) on Hybrid Technologies for Teaching and Learning in Higher Education: Access and Prior Experience on B.Ed. students. Some studies conducted on MOODLE with other methods were done by Almenara, Arancibia, and Prete (2019) on higher education teachers to explore the didactic use of classes with MOODLE platform; Zalavra and Papanikolaou (2019) on pre service teachers to explore the usefulness of the Learning Designer (LD) process using an LD tool towards the implementation of a design in a Learning Management System (LMS); Karatas (2018) on Turkish students to verify digital certificates given to the participants through exam module of MOODLE; Bataineh & Mayyas (2017) on effect of MOODLE-enhanced instruction on Jordanian EFL students reading comprehension and grammar performance; Gupta and Singh (2017) on Teacher educator of Delhi on usage of E-learning tools; Koneru (2017) on Exploring MOODLE Functionality for Managing Open Distance Learning E-Assessments, India; Zainuddin, Idrus and Jamal (2016) on PG students and lecturers, to analyze the functionalities of the MOODLE platform; Goyal and Tambe (2015) on Effectiveness of MOODLE-Enabled Blended Learning in Private Indian Business School Teaching Niche Programs consisting of students and faculty of Pharmaceutical Management and Biotechnology Management Programs(India); Hsu and Chang (2013) on Extended TAM Model: Impacts of Convenience on Acceptance and Use of MOODLE; Li, Fan, and Jiao (2016) on Integrate WeChat with MOODLE to Provide A Mobile Learning Environment for Students; Subramanian, Zainuddin, and Alatawi (2014) on A Study of Comparison between MOODLE and Blackboard based on Case Studies for Better LMS. Very few studies conducted on different Pedagogy were as Pandey(2020) on the Effectiveness of developed MOODLE based on Psychological perspectives of B.Ed. learners (India); Ferdiánová (2017) on the introduction of interactive materials for Monge projection in mathematics, which are implemented into LMS MOODLE; Gunduz and Ozcan (2017) on students perception on using the MOODLE system in a secondary school in English as a foreign language lesson.; Seifert (2017) on using MOODLE in teaching for pre-service teacher education; Allen (2015) on Social media as an alternative to MOODLE in English as a Foreign Language (EFL) teaching practice forums for teacher trainees; Hay and Dale (2014) on Moving through MOODLE: Using e-technology to enhance social work field education. There were only two studies related with Info-savvy skills by Purohit (2016) on implementing educational activities for exploring coping skills for the 21st century among students of secondary level and Dhodhi (2011) on teachers Development and implementation of a program for enhancing info savvy skills in student.

On the basis of above-mentioned reviews, the following observation was made:



Only four researches were found in the INDIAN context on effectiveness of MOODLE. Researcher can take different states and cities of India for the research work.

The majority of work was done on the effectiveness of MOODLE, while work in science subjects, a Social Science subject, Curriculum Development, etc. still are some concern areas.

There were few researches done at B.Ed. level on effectiveness of MOODLE. So, the research work at the B.Ed. level could be carried out.

All these observations are drawn the interest of the researcher for putting forward the proposal for the present study on B.Ed. students of Madhya Pradesh by developing MOODLE on Curriculum Development.

1.2.0 STATEMENT OF STUDY

Effectiveness of Modular Object-Oriented Dynamic Learning Environment Based on Curriculum Development of B.Ed. Students in Terms of Achievement and Reaction

1.3.0 VARIABLES OF THE STUDY

The variables which were used in the present study are given here under:

1) Independent Variable: The independent variables are those variables which on manipulation affect the dependent variable. In this study Method of teaching was the independent variable which on manipulation affect the dependent variable of study. The two method of teaching used in this study were Moodle course and traditional method.

2) Dependent Variable: The dependent variables are those variables which show changes according to the manipulation in independent variable. Achievement in the Curriculum Development subject was taken as the dependent variable in the study.

3) Secondary Independent Variable: The secondary independent variables are the moderate variables of which researcher interested in study the collective effect on dependent variable. Computer attitude and Info savvy skill were taken as the secondary independent variables.



4) Covariate: Covariate is closely related with the dependent variable and basically pretest was taken as covariate to control its effect on dependent variable. But any other variable can also be taken as covariate if it is highly related with the dependent variable. In the present study pre achievement of curriculum development was taken as covariate.

1.4.0 OBJECTIVES

The following objectives were made:

1.To compare adjusted mean scores of achievement in Curriculum Development of the control group and experimental group by taking pre-achievement as a covariate.

2.To study the effect of Treatment, Residential Background, and their interaction on achievement in Curriculum Development of students by considering their pre-achievement as a covariate.

3.To study the effect of Treatment, stream and their interaction on achievement in Curriculum Development of students by considering their pre-achievement as a covariate.

4. To compare adjusted mean scores of achievement in Curriculum Development of the high, average and low level of computer attitude of students of experimental group by taking pre-achievement as a covariate.

5.To compare adjusted mean scores of achievement in Curriculum Development of the high, and low level of Info-savvy skill of students of experimental group by taking pre-achievement as a covariate.

6. To study the mediating effect of info savvy on Computer Attitude and Achievement in Curriculum Development of students by taking pre scores as covariate.

7. To study the reaction scale of the experimental group towards MOODLE.

1.5.0 HYPOTHESES

The hypotheses formed based on the objective will be as follows:

1. There was no significant difference in the adjusted mean scores of achievement in Curriculum Development of the control group and experimental



group by taking pre-achievement as a covariate.

2. There was no significant difference in the adjusted mean scores Treatment, Residential Background, and their interaction on achievement in Curriculum Development of students by considering their pre-achievement as a covariate

3. There was no significant difference in the adjusted mean scores Treatment, subject stream, and their interaction on achievement in Curriculum Development of students by considering their pre-achievement as a covariate

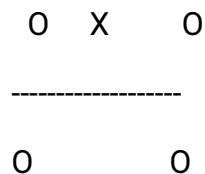
4. There was no significant difference in the adjusted mean scores of achievement in Curriculum Development of the high, average and low level of computer attitude of students of experimental group by taking pre-achievement as a covariate

5. There was no significant difference in the adjusted mean scores of achievement in Curriculum Development of the high and low info savvy group by taking pre-achievement as a covariate

6. There was no significant mediating effect of infosavvy on computer attitude and Achievement in Curriculum Development of students by taking pre scores as covariate.

1.6.0 RESEARCH DESIGN

The present study will be experimental in nature. The study will be designed on the lines of Non-Equivalent Control Group Design as per Campbell and Stanley 1963, the layout of the design as given under.



Here,

O represents the pre-test and post-test

X represents treatment given to the experimental group, and

The ---- dotted line represents the non-equivalent nature of the design

There were two groups one group designed as Experimental group (above the



dotted line) and the other group as Control group (below the dotted line). Experimental group was given treatment of developed MOODLE by the researcher whereas Control group was given treatment with traditional method. Before applying treatment to both the groups a pre-test was administered and after treatment post-test was taken.

1.7.0 SAMPLE

The population of the study consists of B.Ed. students of college. Purposive sampling technique was done for selecting the sample from the B.Ed. Institutes of Madhya Pradesh recognized by the NCTE. There were three institutions were selected with desired characteristics from the B.Ed. colleges of Indore, M.P. from these the students of one institute that is School of Education, DAVV, Indore were taken under Experimental group while the students from other two institutes that is Vaishnav Institute of technology and management and ILVA were taken under control group. A total of 135 students were selected from all the institution.

	Institute Name	Initial stage	Final stage	Total
Experimental group	School of Education, DAVV Indore	60	57	57
Control group	Vaishnav Institute of technology and management, Indore	75	47	58
	ILVA indore	21	11	
Total				115

1.8.0 TOOLS

Three tools were used in this study for assessing the student's computer attitude, Info-savvy skills and their reaction towards the developed MOODLE course.

1. To assess the computer attitude of students Computer Attitude Scale (CAS) was used which was developed by Dr. Tahira khaton and Manika Sharma in

2012. The reliability of the tool was 0.93 and content validity was established.

2. Info savvy tool was used to determine the info savvy skills of student through Info-Savvy Skill Rating Scale developed and standardized by researcher. Details of Construction and standardization of info savvy tool was explained in chapter 4.

3. Reaction Scale was developed by researcher to assess the responses of students after studied through Moodle course.

1.8.1 CONSTRUCTION OF MOODLE

This caption covers the steps of developing a course on MOODLE platform from the site <https://moodle.org> or <http://moodlecloud.com>. To construct Moodle course, one can operate the basic computer operations such as Microsoft office (word, excel, ppt), can able to download videos, e-content, etc. from website. All these operations help in adding content in Moodle. The following steps will be systematically followed to create a course in Moodle.

STEP 1: Create your site

To create a new course firstly goes to site administrator of Moodle cloud from where course can be developed. Firstly register yourself by entering all the details and then click start a free trail. Now site was created for 45 days free access to all the functions. Further site can be purchased as per the requirement.

STEP 2: Add new course

After sign in a new course can be added by click on the link given and enter all the general details required about the course and then click save and display. A new course was added on the home page. By default there were weekly sections present which can further be modified as required.

STEP 3: Enrollment

Now enroll yourself in the course, so that the new course will be appear and available in the list of courses. After that enroll users by entering the names in the pop up window. For enrollment details of students were required such as name, email id, etc.

STEP 4: Add Lesson Plan



From the selected units of course (curriculum development), different lessons will be prepared and added in the course by clicking +Add an activity or resource. Moodle toolbar will be displayed on the screen, now select Lesson from the activities and click Add. Then click save and next.

STEP 5: Create Question Page

For adding question page select Add a question page from Action. Then select question type (multichoice question), this will open a new page where question should be written in page title. After adding question, add answer and its response as shown in the following figure. Then click and save.

STEP 6: Create More Content and Question Page

Similarly, more content and question pages will be added to made lessons. And lastly save the content. At the end the following structure will displayed.

1.8.2 CONSTRUCTION OF INFO SAVVY SKILL RATING SCALE

This caption includes the steps of development and standardization procedure of the tool of info savvy. For the construction of Info Savvy Skill Rating Scale (ISRS), there were 52 statements framed after careful study of related literature. The prepared draft was given to 10 experts and was analysed on the following points:

1. The statement should be simple.
2. The statement should be in understandable language.
3. The statement should express one single idea.
4. The statement should be relevant to the dimensions of info savvy skill.
5. The construction of statement consists of easy words.

As per the expert's suggestions statements were modified, split into parts and removed. The revised version consists of 52 statements. Subjects should respond to each of the items on a 5-point scale, the response range being 'Always', 'Often', 'Sometime', 'rarely' and 'never'. For construction of ISRS, Likert's technique was preferred because it is simpler and less time consuming and does not involve judgments for scaling the statement.

1.8.1.1 Try out stage



The initial form of Info Savvy Skill Rating Scale consists of 52 statements which was administered on 10 students of B.Ed. from which 5 feedback taken in online mode and 5 in offline mode. On the basis of all the feedback, some statements were modified and some were removed.

1.8.1.2 Final draft

In the final form of ISRS there were total 40 statements with 20 positive framed statements and 20 negatively framed statements. This form was distributed in online mode to different colleges/ universities of Madhya Pradesh. Total 757 forms were received, out of which only 684 responses were considered, as all the repeated responses were removed. The Item analysis technique was employed for selection/rejection of test items for preparing final draft. For this, top and bottom 27% of the responses were selected for further analysis. The significance values of all the statements were calculated by using independent t test, and only those statements were selected whose significance value was below 0.05 level of significance. This final draft of ISRS has 21 statements, 15 positive worded and 6 negative worded, distributed in 5 dimensions.

1.8.2 Standardization of ISRS

For establishing the norms with different variables such as Gender, Qualification, Subject stream, Age, Residential Background, Percentile was calculated (Table 5). The values in bold were calculated by taking the mean of upper and bottom values as the data of that category was not found in the researcher's sample for data collection. The percentile norms were represented in Table 6.

By calculating the intensity index of student one can assess the info savvy skill of that student in that group. For this, firstly the Info Savvy Skill Rating Scale will be administered on college students and collect the data. Give the scores as per the scoring weightage (Table no.3) and scoring key. Now calculate the sum of scores of each individual (example: 93) and divide it by 21(total no. Of questions) that is $93/21 = 4.4$. This will be the raw scores of that individual and on the basis of which interpretation will be done.

1.9.0 SAMPLE OF THE STUDY

The population of the study consists of B.Ed. students of college. Purposive sampling technique was done for selecting the sample from the B.Ed. Institutes of Madhya Pradesh recognized by the NCTE. There were three institutions were selected with desired characteristics from the B.Ed. colleges of Indore, M.P.



from these the students of one institute that is School of Education, DAVV, Indore were taken under Experimental group while the students from other two institutes that is Vaishnav Institute of technology and management and ILVA were taken under control group. A total of 135 students were selected from all the institution.

As mentioned earlier that three institutions were taken in the study. The details of student selected were given in the Table.

1.10.0 PROCEDURE OF DATA COLLECTION

For collecting the data, the following steps were taken;

1. Taking prior permission of Head/Principal of the Sample Institutes,
2. Taking and arranging the lecturer time with subject Teacher,
3. Establishing a rapport with the sample and delivering an orientation about the way of teaching before taking the pre-test.

The following table represents the procedure which was followed in the present study.

Activities	Experimental group	Control group	Time
Pretesting of dependent variable	Administration of Achievement test on Curriculum Development		45minutes
Treatment	Implementation of developed MOODLE	Routine activities and traditional method	40minutes per day spread over two months
Testing of moderate variables	Administration of Computer attitude scale		40minutes
	Info-savvy skills Rating scale		30minutes



Activities	Experimental group	Control group	Time
Post testing of dependent variable	Administration of Achievement test on Curriculum Development		45minutes

1.11.0 DATA ANALYSIS

The data were analyzed by using following statistical techniques:

- 1) For compare adjusted mean scores of achievement in Curriculum Development of the control group and experimental group by taking pre-achievement as a covariate, the data were analyzed with the help of one-way ANCOVA.
- 2) For study the effect of Treatment, Residential Background, and their interaction on achievement in Curriculum Development of students by considering their pre-achievement as a covariate, the data were analyzed with the help of 2x2 ANCOVA.
- 3) For study the effect of Treatment, subject stream and their interaction on achievement in Curriculum Development of students by considering their pre-achievement as a covariate, the data were analyzed with the help of 2x3 ANCOVA.
- 4) For compare adjusted mean scores of achievement in Curriculum Development of the high, average and low level of computer attitude of students of experimental group by taking pre-achievement as a covariate, the data were analyzed with the help of one-way ANCOVA.
- 5) For compare adjusted mean scores of achievement in Curriculum Development of the high, and low level of Info-savvy skill of students of experimental group by taking pre-achievement as a covariate, the data were analyzed with the help of one-way ANCOVA.
- 6) For study the mediating effect of info savvy on computer attitude and Achievement in Curriculum Development of students by taking pre scores as covariate, JN procedure was used.
- 7) For study the reaction scale of the experimental group towards MOODLE, Mean (M), Standard deviation (SD) and Coefficient of Variation was calculated



as well as percentage was calculated for each statement.

1.12.0 FINDINGS

1. There was significant change in post scores due to groups ($b=-13.28$, $t=-10.38$, $p=.00<0.05$). It means there was significant difference in experimental group and control group in the absence of mediator (prescores). Further by analyzing the sign of coefficient it can be interpreted that post scores of experimental group was found to be significantly higher than the post scores of control group.

2. The moderation effect of residential background was not found to be significant. It is clear that the region between the scores 22.74 to 35.08 were lie in significant region where the effect of treatment was found to be not significant.

3. The moderation effect of subject stream was not found to be significant. It is clear that the region between the scores 23 to 35.65 were lie in significant region where the effect of treatment was found to be not significant.

4. There was significant change in post scores due to CAS ($b=-3.943$, $t=-2.048$, $p=.04<0.05$). It means there was significant difference in Achievement scores in the absence of mediator (prescores). by observing the negative sign of coefficient it is clear that the higher computer attitude Students achieve higher scores in post scores and vice versa.

5. There was significant change in post scores due to info savvy ($b=4.946$, $t=-2.030$, $p=.04<0.05$). It means there was significant difference in Achievement scores in the absence of mediator (prescores). by observing the negative sign of coefficient, it is clear that the higher info savvy skill Students achieve higher scores in post scores and vice versa.

6. From the above analysis it is clear that there was insignificant effect of CAS while significant effort was found for the covariate. Further by analyzing the coefficient sign that is negative it can be concluded that the achievement scores of higher info savvy was found higher than the achievement scores of lower info savvy. Also, the mediation was considered as Full because p value was found to be not significant.

7. The mean was found to be 221.32 which is above the average score that is 142.5 (MaxM:285, minM:57). Therefore, it is clear that the student's response was in favor of using Moodle. Also, coefficient of variation was found to be



12.66% which is very small and shows that there were less differences in the response of students. Hence, it can be concluded that the responses of the students were in favor of the effectiveness of the Moodle course.

1.13.0 DELIMITATION

The present study will be delimited to:

1. B.Ed. students of selected institutes of Madhya Pradesh only,
2. The selected content of Curriculum development as subject at B. Ed. Level only in UTDs and affiliated colleges.

1.14.0 EDUCATIONAL IMPLICATIONS

1) Students

From the findings of the present study, it was clearly found that the Moodle can help students in enhancing their achievement as it provides flexibility in terms of when and where they study. Also, it made learning engaging and participatory. One of the most important features of the Moodle, which helps student in their progress was rapidly feedback and track their progress. Other findings also shows that this method was significantly effective for any residential background student having any subject stream who achieves above average scores. It will more beneficial for students having high computer attitude and enforcement skills.

Considerations:

1. Self-Discipline: Online learning through Moodle requires self-discipline and time management skills as students must often set their schedules and pace.
2. Digital Literacy: Some students may need to develop or enhance their digital literacy skills to navigate Moodle effectively.
3. Technology Requirements: Reliable internet access and a computer or mobile device are necessary, which might not be accessible to all students.
5. Technical Issues: Technical problems like server outages or browser compatibility can disrupt the learning experience, requiring patience and adaptability.



6. Privacy and Security: Students need to be cautious about their personal data and privacy when using online platforms like Moodle.

8. Engagement and Motivation: Some students may find it challenging to stay engaged and motivated in a digital learning environment. Instructors play a critical role in facilitating engagement.

9. Assessment Fairness: Students may be concerned about the fairness and integrity of online assessments and exams, which can be addressed through secure assessment methods.

II) Teachers

From the present study it was found that the Moodle platform was helpful in teaching the content at B,Ed. level. So, teachers can Use Moodle course for teaching the content which is suitable for teaching online. As it gives interactive features like discussion forums, quizzes, and surveys, enhancing student engagement and participation. Teachers can provide prompt feedback on assignments and quizzes, supporting student learning and allowing for quick adjustments to instructional methods. Moodle's tools for tracking student progress and participation can help teachers identify individual learning needs and provide tailored support. Teachers can consolidate all course materials, including lectures, assignments, readings, and multimedia content in one place for easy access by students. Moodle allows educators to create and manage courses with flexibility, enabling them to adapt to different learning styles and pace.

Considerations:

1. Technical Competence: Teachers may need training to effectively use Moodle's features, especially if they are new to the platform.

2. Content Design: Designing effective and engaging online content requires additional effort and expertise. Teachers must create resources suited to an online learning environment.

3. Monitoring and Support: Teachers need to monitor student activity and provide support promptly, addressing any issues or concerns that arise in the virtual classroom.

4. Time Investment: Preparing and managing Moodle courses can be time-consuming, especially when designing multimedia content and interactive activities.



5. Privacy and Data Security: Teachers must handle student data responsibly, ensuring that privacy and security are maintained in line with institutional policies.

6. Technical Issues: Teachers should be prepared for technical glitches and outages that can affect the learning experience and have contingency plans in place.

7. Engagement and Motivation: Maintaining student engagement and motivation can be more challenging in a digital environment, so instructors must employ strategies to keep students engaged.

8. Assessment Integrity: Ensuring the integrity of online assessments and exams is crucial to maintain academic standards.

III) Curriculum Developers

Moodle helps curriculum developers for creating and modify courses, allowing for easy adjustments to changing educational needs. They can increase engagement of students actively by introduce variety of interactive tools, such as quizzes, discussion forums, and multimedia elements, which can be integrated into the curriculum. Also, Moodle helps in simplifying curriculum management by organizing and storing All course materials, including content, assessments, and learning resources at one place. It helps Curriculum developers to tailor course align with specific learning objectives and cater to diverse learner profiles. Also it helps in Data-Driven Decision-Making in which Curriculum developers can collect data on student engagement, performance, and feedback, providing valuable insights for ongoing curriculum improvement. As well as Moodle supports collaborative curriculum development, enabling multiple educators and stakeholders to contribute to course content and design.

Considerations:

1. Technical Expertise: Curriculum developers need to have a strong understanding of Moodle's features and capabilities to design effective courses.

2. Content Adaptation: Converting traditional curricula to the online format requires careful adaptation to suit the digital learning environment.

3. Quality Assurance: Ensuring the quality and consistency of course materials, assessments, and interactive elements is essential for successful curriculum development on Moodle.

4. Professional Development: Curriculum developers may need training and



professional development opportunities to stay current with e-learning best practices.

5. Assessment Design: Crafting online assessments that are valid, reliable, and fair can be challenging and requires close attention.

6. Monitoring and Evaluation: Ongoing monitoring and evaluation are necessary to assess the effectiveness of the curriculum and identify areas for improvement.

7. Engagement Strategies: Curriculum developers should consider strategies to keep students engaged and motivated in an online learning environment.

8. Security and Privacy: Protecting student data and ensuring the privacy of all course participants is a critical consideration

IV) Principles

1. Principals, as educational leaders within institutions, play a significant role in the successful implementation of Moodle and online learning. Here are implications for principals when it comes to adopting Moodle in their educational settings:

2. Strategic Planning: Principals can strategically plan for the integration of Moodle into their institution's educational programs, aligning it with the school's mission and vision.

3. Resource Allocation: Ensure adequate resources, including training for teachers and technical infrastructure, to support the effective use of Moodle in the institution.

4. Professional Development: Prioritize professional development for teachers and staff to build their capacity in using Moodle and online teaching methods.

5. Data-Driven Decision-Making: Utilize data collected from Moodle to make informed decisions about curriculum improvements, resource allocation, and student support.

6. Curriculum Enhancement: Collaborate with curriculum developers and instructional designers to ensure that Moodle-based courses are pedagogically sound and aligned with educational goals.

7. Quality Assurance: Establish quality assurance processes to maintain the quality of courses and ensure that they meet institutional standards.



8.Support and Guidance: Provide guidance and support to teachers and students in using Moodle effectively, addressing any technical or pedagogical challenges that may arise.

Considerations:

1.Technical Infrastructure: Ensure the institution has the necessary technical infrastructure to support Moodle, including reliable internet access and server capacity.

2.Data Security and Privacy: Implement robust data security and privacy measures to protect student and teacher data.

3.Budget Constraints: Principals need to carefully manage budget constraints and allocate funds effectively to support the adoption and maintenance of Moodle.

4.Equity: Consider equity issues, ensuring that all students have access to the technology needed for Moodle-based learning.

4.Monitoring and Evaluation: Continuously monitor the impact of Moodle on teaching and learning, and be prepared to make adjustments as needed.

5.Stakeholder Engagement: Involve teachers, parents, and students in the decision-making process and seek their input to make Moodle implementation more effective.

V) Implications for teacher training institutions

Teacher training institutions play a critical role in preparing educators for effective teaching in modern classrooms. When it comes to incorporating Moodle courses into teacher training programs, there are several implications for these institutions to consider:

1. Digital Literacy Training: today's generation was addicted to digital tools, they feel easy to work with mobile, laptops, smart watch etc, so a teacher should be techno friendly for which Teacher training institutions can use Moodle to train aspiring educators in digital literacy and the effective use of educational technology, a crucial skill in today's classrooms.

2. Moodle allows prospective teachers to experience online learning as students, which can help them better understand and adapt to diverse learning styles and preferences.

3. Pedagogical Strategies: In the present study curriculum development subject



was taken as content but by using Moodle in teacher training, institutions can model pedagogical strategies that emphasize active learning, collaboration, and student engagement.

5. **Assessment Methods:** Moodle offers opportunities for exploring various assessment methods and tools, helping trainees develop skills in creating fair and effective assessments.

Considerations:

1. **Training and Support:** Provide adequate training and ongoing support for teacher trainers to effectively design and deliver Moodle-based courses.

2. **Accessibility and Inclusivity:** Emphasize the importance of creating accessible and inclusive online learning environments and guide trainees in these practices.

3. **Balancing Technology and Pedagogy:** Encourage a balance between technology and pedagogy, ensuring that trainees understand how to use Moodle as a tool to enhance learning, not just for its own sake.

4. **Curriculum Integration:** Align the Moodle courses with the overall curriculum of teacher training programs to ensure that trainees are well-prepared for their future roles as educators.

5. **Assessment of Competency:** Assess trainees' competency in using Moodle and online teaching methods as part of their training program.

6. **Updates and Evolving Technology:** Keep the Moodle courses and training content up to date to reflect the evolving technology and best practices in online education.

7. **Collaboration Skills:** Promote collaboration among trainees, fostering a community of practice where they can share experiences and insights about using Moodle.

1.15.0 SUGGESTIONS FOR FURTHER RESEARCHS

1. The present study was done on the Moodle platform, but there were several online platforms on which study can be performed.

2. The present study was done by developing a MOODLE course on Curriculum Development subject of B.Ed. program, so Moodle course can be developed for



other B.Ed. subjects also.

3. The present study was confined to B.Ed. students only, so further studies on M.Ed. or other level can be performed.

4. The present study focuses on Info-Savvy skill and computer attitude variables only, there are several other variables like intelligence, study habit, personality etc. Can be considered.

5. The coverage of sample for the present study delimited to M.P. only, other states will also take for the further studies.

6. Some demographical variables like gender, age, Socio Economic Status were untouched, can be considered for further researches.

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