A Comparative Study of the Degree of Awareness of Teachers about Expected Learning Outcomes at Pre-service and In-service Level

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Abstract

The current study examines the degree to which pre-service and in-service instructors are about the expected learning outcomes. To compare the level of awareness at the two levels, the researcher used a descriptive survey method. The study's sample comprised the twenty pre-service and in-service science teachers in Agra. A self-constructed tool was used for data collection, namely a survey on the degree of awareness of expected learning outcomes. The data was analysed using the t-test, mean, and standard deviation. The result demonstrated that in-service teachers have a greater understanding of the expected learning outcomes for science at the secondary level compared to pre-service teachers. According to the study, to improve students' learning outcomes in the classroom, teachers at all levels of education should be acquainted about the published expected educational outcomes at all levels.

Keywords: *Expected Learning Outcomes, Pre-service teachers, In-services teachers and NEP-2020*

Introduction

Curriculum planning and development, as well as the design, delivery, and evaluation of academic programs, will benefit from the use of the expected learning outcomes as a point of reference when creating graduate attributes, qualification descriptors, program learning outcomes, and course learning outcomes (UGC, 2019). Additionally, the abilities that students continue to build and enhance are known as anticipated learning outcomes (NCERT, 2019). Assessment criteria known as Expected Learning Outcomes specify the expected learning levels that students in that class are expected to meet. The Central Rules of the Right of

Children to Free and Compulsory Education (RTE) Act, 2009 now include the Learning Outcomes (NCERT, 2020).

Logic, reasoning, creativity, intellect, problem solving, and practical application of learning are all correlated with great learning outcomes, which also lead to improved chances and high academic accomplishment. The whole set of knowledge, abilities, competences, attitudes, values, facts, and behaviours that a student should possess upon successfully completing the program is known as expected learning outcomes (UNESCO, 2019).

The process of learning never stops. The educational and learning procedures used to build competences influence the learning results. National and societal issues including gender, inclusivity, constitutional values, environmental preservation, and special needs children should be given enough consideration when defining the intended learning objectives. Additionally, it is essential to have 21st century skills including creativity, critical thinking, and problem solving (NCERT, 2019). The nature of the subject determines these expected learning outcomes.

The Sustainable Development Goals 4 and the issue of universal access to high-quality education are closely related to these learning objectives. Education is the force multiplier that promotes self-reliance, increases economic growth by improving skills, and enhances people's lives by creating possibilities for better livelihoods, according to the Sustainable Development Goal-4 (SDG-4) of the UN (NCERT, 2019). The formal guidelines, the implemented curriculum, and the acquired curriculum—what students really learn—need to be aligned in order to enhance the quality of education (NCERT, 2019).

In order to bridge the gap between intended and actual understandings, educators must learn how to create formative assessments using learning outcomes and curriculum frameworks. These assessments can show students' knowledge and abilities and enable teachers to interpret the results and modify their teaching methods (UNESCO, 2019). Expected Learning Outcomes assist the instructor in effectively imparting curriculum information. Teachers should be assisted by curricula in comprehending and putting into practice the best practices for these children (UNESCO, 2019).

All of life depends on education. A person benefits from education in every aspect of life. As a result, everyone needs access to high-quality education. Therefore, we anticipate that the topic will yield learning outcomes that demonstrate the knowledge, information, skills, attitude, competencies, problem-solving abilities, cognizance, and values that the student has acquired

after completing a certain section of the course. Any quantifiable skills, talents, knowledge, or values that a student exhibits as a result of finishing a particular course or class are known as learning outcomes (Suvin 2019). Teachers follow the textbook when creating the syllabus, but they are unclear about the type of learning they want from their students in different areas (NCERT, 2019).

Through the measurement of expected learning outcomes, assessments are a continuous evaluation process that aids students in understanding and enhancing their learning. This makes it easier for students to understand why they are being evaluated and what they must do to improve their course scores (Suvin, 2019).

Researchers might assess pre-service and in-service teachers' understanding of learning outcomes by looking at the predicted learning outcomes of secondary school science students. Additionally, determine which group is better knowledgeable about the NCERT-published learning outcomes.

The nature of the subject establishes higher expected learning results for the students' greater achievement. High expectations for a topic can lead to low success, gender stereotyping, academic anxiety, and other depriving effects. Learning outcomes serve as a gauge for an academic program's or course's performance. For the course or program to be conducted and completed effectively, the teaching environment, learning activities, and assessment plan must be appropriately developed based on the defined learning outcomes (Singh, 2017). Learning outcomes serve as a roadmap to help students achieve the intended course goals. Additionally, they assist teachers in identifying the right course of action and inform students of their potential outcomes at the end of the course. They also assist instructors and students in understanding the proper path to take (Singh, 2017).

Using contextual resources and suitable learning processes, instructors may create and offer a range of learning opportunities and scenarios to meet the needs of diverse students in an inclusive classroom, according to the learning outcome document. NCERT, 2020. The learning teaching model is a way of thinking about learning materials that encourage students to relate to everyday life as members of the family and society and assist instructors relate to real-world issues (Sears & Susan, 2000; Johnson, 2002).

To ascertain the level of awareness of learning outcomes in their teaching practice, the researcher decided to examine the awareness of expected learning outcomes in pre-service and in-service teachers' teacher education. This is because expected learning outcomes indicate the

extent to which learners should be knowledgeable about the subject matter. Students may learn more effectively if teachers are aware of the desired learning outcome.

Objectives

- To study the degree of awareness of expected learning outcomes of pre-service teachers at secondary level.
- To study the degree of awareness of expected learning outcomes of in-service teachers at secondary level
- To compare the degree of awareness of expected learning outcomes of pre-service and in-service teachers at secondary level

Hypothesis

There exists no significant difference between the degree of awareness of expected learning outcomes by pre- service and in-service teachers.

Delimitation of the Study

- The study was limited to the Institutes and Schools of Agra
- The study was limited to the class IX & X.
- The study was limited to the Science subject only.

Methodology of the Study

Method of the Study

The present study "A Comparative Study of the Degree of Awareness of Teachers about Expected Learning Outcomes at Pre-service and In-service Level" is descriptive survey in nature.

Descriptive research refers to the methods that describe the characteristics of the variables under study. This methodology focuses on answering questions relating to "what" than the "why" of the research subject. Descriptive Survey is a part of the descriptive research. Descriptive survey research uses surveys to gather data about varying subjects. This data aims to know the extent to which different conditions can be obtained among these subjects.

In this survey, researcher compares the degree of awareness of teachers about expected learning outcomes at pre-service and in-service level through the descriptive survey.

Sample of the Study

A researcher would like to obtain the data from all members of the population, and it is almost impossible; therefore, a small subset of the population which must be representative of all the members in that population is drawn. This subset which mirrors the characteristics of population is called sample (Ghosh, 2020).

Purposive sampling method was used for the present study for which researcher selects schools of Dayalbagh board and C.B.S.E. i.e. Prem Vidhyalaya, Radhasaomi Educational Institute, Sunflower Public School, Saraswati Shishu Mandir, Braj Public Inter College, S.R.D. Sr. Sec. School, S.G. School, Baluni Public School and Radhaballabh Public School. Pre-service teachers were selected from Dayalbagh Educational Institute and from aforementioned Schools In-Service teachers were selected.

After the immense literature review, instruments were decided, and questionnaire was prepared to compare the degree of awareness among Pre-service and In-service teachers.

Tool of the Study

- A self-constructed questionnaire was constructed for the present study in the following manner.
- Based on the extensive literature reviews, various expected learning outcomes were analysed.

First Draft *

- Based on that researcher decided to design the questionnaire in four sections i.e. Section A comprises of General outlook of expected learning outcomes, Section B consists of items related to expected learning outcomes of class IX, Section C involves of items related to expected learning outcomes of class X and Section D involves the Assessment of expected learning outcomes.
- Five-point Likert response formats is used in the questionnaire, in order to measure all items uniformly.

Then with the help of secondary level textbooks and prescribed draft of NCERT of expected learning outcomes, items were constructed.

- Then instrument was selected and decided through reviewing the literature and textbooks.

- A questionnaire was prepared for Expert review.

Second Draft **

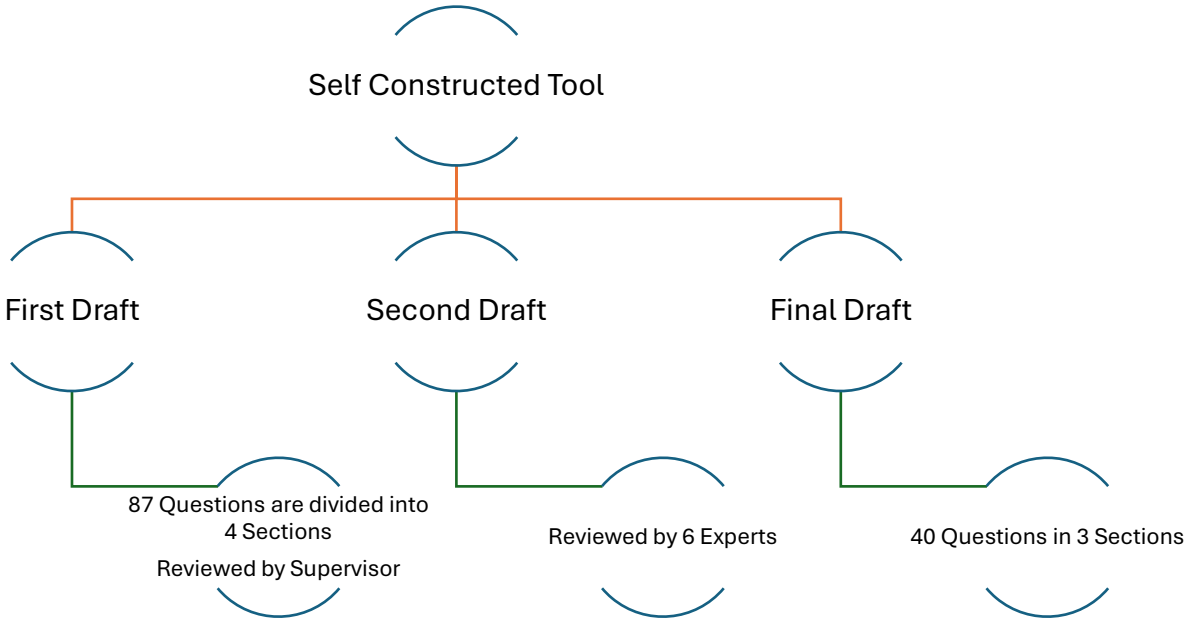
- The questionnaire of the survey had 87 items from which few items were selected in the upcoming draft after the expert review.
- The questionnaire was reviewed by 6 experts.

Third Draft ***

After item analysis based on the degree of appropriateness 40 questions was selected in the final draft of the questionnaire.

Figure 1

Development of Self Constructed Tool



Administration of the Tool

The researcher constructs items and administers the survey in both the modes i.e. online and offline. For online mode researcher prepared a Google Form of the self-constructed

questionnaire and for offline mode researcher gave hard copy of the questionnaire to the teachers. After the permission of concerned authority questionnaire was sent to the teachers.

The detailed instruction was mentioned on the questionnaire and teachers must tap just one option whatever they like. All the items of questionnaire are compulsory, no time limit was imposed, and they were advised to give their honest answers.

Validity of the Tool *

The experts were asked to review the questionnaire based on the established objective in order to evaluate the validity of the work's rationale. This allowed for the determination of the questionnaire's validity.

The questionnaire of “A comparative Study of the Degree of Awareness about Expected Learning Outcomes of Teachers at Pre-service and In-service Level” is one dimensional whose ICVI after expert reviews comes out to be 0 .864.

Reliability of the Tool **

To determine the reliability of the self-constructed test, Split half method was used. For this purpose, the questionnaire was distributed among 20 teachers. The reliability coefficient is 0.82 which indicates high reliability of the questionnaire.

Statistical Techniques

Statistical techniques were employed to give the concise picture to the data so that it can be easily comprehended. The following statistical techniques were used to test the hypotheses:

 Descriptive statistics like Mean, Median, Standard Deviation, and their graphic representation will be made to study the general nature of data

 For the comparison, the t-test was employed so as to find out the significance of difference between means related to different groups and different levels.

Analysis and Discussion

On the basis of the objectives of the study, data have been analysed and interpreted by giving statistical treatment. This was done by logical organization of the data and use of relevant statistical techniques, the results and discussions were accordingly organized and presented under the following sections: -

Section A: Degree of awareness of expected learning outcomes of pre-service teachers at secondary level

Section B: Degree of awareness of expected learning outcomes of in-service teachers at secondary level.

Section C: Comparison of the degree of awareness of expected learning outcomes of pre-service and in-service teachers at Secondary level

Section A: Degree of Awareness of Expected Learning Outcomes of Pre-service Teachers at secondary level.

Table 1

Statistical Analysis of Pre-Service Teachers

Level of Degree of Awareness	No. of Pre-Service Teachers	Degree of Awareness of Expected Learning Outcomes		Skewness	Kurtosis
		Mean	**Standard Deviation**		
Low	6	111.8	4.12		
Average	25	123.2	5.53	**1.71**	**0.63**
High	4	145.2	2.99		
Total	35	124.3	1.69		

The table 1 presents the detailed analysis of the degree of awareness among pre-service teachers provides valuable insights into their understanding of the prescribed expected learning outcomes by NCERT. The findings are more reliable since the participants' overall mean score of 124.32, with a standard deviation of 1.69, shows that they were typically highly knowledgeable and that there was little variation in their answers. Six people, with a mean score of 111.83 and a standard deviation of 4.12, were classified as having poor awareness, indicating substantially lower awareness levels and somewhat larger score variability. With an average awareness of 123.2 and a standard deviation of 5.53, the majority of participants—25 in all—were in the medium awareness group, indicating moderate awareness with some fluctuation. With a much higher mean score of 145.25 and a smaller standard deviation of 2.99,

four participants fell into the high awareness category, indicating considerable awareness and consistency within this group.

All things considered, the pre-service teachers showed a 76% awareness level of the anticipated learning objectives, which is a good sign of their comprehension. The reliability of the results is further supported by the low standard deviation, which further validates the scores' little variation from the mean. The data has a little rightward skew, as indicated by the skewness value of 1.71, which shows a concentration of scores in the lower awareness range with a tail extending towards greater awareness. The data is well-distributed and neither too peaked nor flat, as shown by the kurtosis score of 0.63, which points to a distribution that approaches normalcy.

Although pre-service teachers often have a high level of awareness, these data show that a small minority of pre-service teachers had lower awareness levels, indicating the need for focused interventions to improve knowledge continuity. Reducing these discrepancies can guarantee that pre-service teachers are more consistently equipped for the learning outcomes recommended by NCERT.

Section B: Degree of awareness of expected learning outcomes of in-service teachers at Secondary level

Table 2

Statistical Analysis of In-Service Teachers

Level of Degree of Awareness	No. of Pre-Service Teachers	Degree of Awareness of Expected Learning Outcomes		Skewness	Kurtosis
		Mean	**Standard Deviation**		
Low	4	115	2.71	0.4	-1.33
Average	24	125.5	6.73		
High	7	142.5	1.81		
Total	35	128.2	1.66		

The table 2 presents the details of the analysis and interpretation of the degree of awareness of In-service teachers. Significant findings about in-service teachers' understanding of the

NCERT-recommended learning outcomes in science are revealed by the examination of their level of awareness. With a mean score of 128.26 and a standard deviation of 1.66, the data's dependability is highlighted by the high degree of awareness among in-service instructors and its low variability. With a mean score of 115 and a standard deviation of 2.71, four participants were classified as being in the low awareness group. This group showed moderate variability and comparatively lower awareness. With a mean score of 125.58 and a standard deviation of 6.73, the majority of participants—24 in all—were classified as having medium awareness, indicating moderate awareness with discernible score fluctuation. On the other hand, seven participants were classified as belonging to the high awareness group. They demonstrated a consistently high degree of awareness, with a mean score of 142.57 and a standard deviation of 1.81.

Compared to pre-service teachers, who showed an awareness level of 76%, in-service teachers showed an overall awareness level of 80% of the intended learning outcomes. Given their practical experience and exposure to real-world teaching circumstances, this difference implies that in-service teachers are more conversant with and comprehend the learning outcomes recommended by the NCERT. All categories have minimal standard deviations, which emphasizes the data's accuracy and dependability.

A somewhat balanced distribution with a slight concentration of scores in the lower awareness range is suggested by the skewness value of 0.4, which shows a slight positive skew. In contrast, a distribution that is marginally flatter than usual is suggested by the kurtosis value of -1.33, which shows a greater range of scores.

According to these studies, in-service teachers exhibit a greater level of awareness than their pre-service mates. The significance of closing this gap through improved training and pre-service teacher preparation programs is highlighted by this discrepancy, which also shows the possible influence of teaching experience on awareness levels. These initiatives can guarantee more consistent comprehension levels between the two groups, which will ultimately help the educational system.

Section C: Comparison of the degree of awareness of expected learning outcomes of pre-service and in-service teachers at Secondary level

Table 3

Comparison of degree of awareness of Expected Learning Outcomes among Pre-service and In-service Teachers

Sr. No.	Levels	Mean	Standard Deviation	t-Test	Significance
1	**Pre-Service**	**122**	**5.64**		
2	**In-Service**	**128**	**5.5**	**4.41**	**Significant**

Table 3 deals with the comparison of the degree of awareness of teachers at both the levels of Secondary education. On comparing in-service and pre-service teachers' levels of awareness of intended learning outcomes, the t-test indicates a significant difference between the two groups. It is evident that in-service teachers are more cognizant of the NCERT-recommended learning outcomes because their mean score (M = 128) is much higher than that of pre-service teachers (M = 122).

This discrepancy is consistent with the descriptive statistics' conclusions. The overall awareness level of pre-service teachers was 76%, whereas that of in-service teachers was 80%. In addition to their regular exposure to educational techniques and practical teaching experience, in-service teachers have a higher mean score, which indicates their advanced comprehension. Pre-service teachers, on the other hand, naturally display somewhat lower awareness levels because they are still in the learning and training period.

The thorough examination of awareness categories also lends credence to this finding. In-service teachers have a higher mean score (125.58) than pre-service teachers in the same category (123.2), even though the majority of both groups are in the average awareness category. With a higher mean score (142.57) and a lower standard deviation (1.81), the in-service group also had a higher proportion of individuals in the high-consciousness category, suggesting that they are more consistent and have a higher level of awareness.

The distribution of scores is further validated by the skewness and kurtosis values. A more positively skewed and peaked distribution is indicated by the pre-service teachers' skewness of 1.71 and kurtosis of 0.63, whereas the in-service teachers' skewness of 0.4 and kurtosis of -1.33 point to a more evenly distributed and flatter distribution. This discrepancy suggests that,

in contrast to pre-service teachers' more diverse awareness levels, in-service teachers not only show more awareness but also more consistency in their comprehension.

In summary, the findings of the t-test, descriptive, and distributional analyses clearly indicate that in-service teachers are far more aware of the intended learning outcomes than pre-service instructors. This study emphasizes how professional experience affects teacher awareness and how crucial it is to improve pre-service teacher preparation programs in order to close the gap and advance fair comprehension of educational standards.

Testing the Hypothesis

There is a substantial difference in the level of awareness between instructors at both secondary school levels, according to the t-test findings, which show a value of 4.41 at a 99% confidence level (0.01 level of significance). This implies that the two groups' awareness levels are not equal and that structural or environmental variables could be at play in this discrepancy. The null hypothesis is thus disproved, which postulates that there is no discernible variation in instructor awareness between the two levels. The significance of focused interventions to overcome these variations in educational settings is highlighted by these findings.

There was a notable difference between pre-service and in-service instructors' levels of understanding of the science subject's expected learning outcomes. The level of awareness of intended learning outcomes was higher among in-service teachers (M=128) than among pre-service teachers (M=122).

Conclusion

The present study “A Comparative Study of the Degree of Awareness of Teachers about Expected Learning Outcomes at Pre-service and In-service Level” has been carried out to study the degree of awareness of teachers at Pre-service and In-service Level.

Compared to other in-service teachers, in-service instructors had a much higher level of awareness regarding intended learning outcomes. This discrepancy may arise from pre-service teachers' lack of experience or exposure to the real world and in-service teachers' greater competence, knowledge, and mastery of the subject matter. Learning outcomes are influenced by a number of instructional and learner variables (Lin, D. et. al, 2019). Teachers may not be aware of these issues, for example. There are numerous strategies and tactics that can help students reach the desired learning outcomes, but teachers may not be aware of them. For example, concept mapping can have an impact on secondary school students' learning

outcomes in relation to metacognition and learning styles (Kaur, R. 2009). It might be possible; teachers are not aware about expected learning outcomes of all the chapters of Science Subject.

Educational Significance of the Study

An academic course's performance is measured by its learning outcomes. Learning outcomes clearly outline the potential results of mastering a certain subject. To ensure that the subject or course is properly planned and executed, the learning objectives should be enumerated and documented prior to the commencement of the course. The teaching context, instructional materials, and assessment plan must all be appropriately created based on the defined learning outcomes in order to carry out the topic successfully. Prior to class, students have a clear understanding of what they will study. Understanding the anticipated learning outcomes has several advantages (Mahajan, M. 2017)

All instructors need to be aware of the NCERT's recommended expected learning outcomes since they are crucial to the teaching and learning process. According to Harden, learning outcomes serve as a means of gaining access to advancement (Harden, R. 2007)

The aim and objectives of a course or academic program are better understood by staff and students when learning outcomes are in place. Teachers can start to provide a clear route for students' achievement by establishing clear and thorough learning objectives. Teachers can make learning more effective and run a well-structured program if they are aware of the intended learning objectives.

Benefits of the Study

The current study helps policymakers and administrators focus on how well-informed they are about the predicted learning outcomes of various disciplines at various levels. Administrators and policymakers can use this data to launch any program aimed at raising teachers' level of subject-matter understanding.

Teachers benefit from the study by knowing about the expected learning outcomes of their subject and the minimal requirements set by statutory bodies for the content of India's future. The draft also assists the teachers in choosing the best teaching strategies for the relevant material.

The study also assists teacher educators in figuring out how much we should teach student teachers about the intended learning objectives and how to properly phrase them.

Suggestions for Pre-Service Teachers

- To fully grasp what the apex bodies require to be taught to children, read and comprehend the NCERT-recommended learning outcomes and compare them with the minimal learning objectives.
- Work on crafting SMART learning objectives, which stand for specific, measurable, attainable, relevant, and time bound.
- Explain to children the specific details that outline the objectives and standards for them.
- Assessment methods must align with the learning outcomes.

Suggestions for In-Service Teachers

- Keep up with the latest information by following the central bodies' recommended learning outcomes.
- When creating question papers, frame learning objectives so that they can have a significant impact on mark distribution.
- Make an effort to create learning objectives that encourage higher order thinking in your pupils.

Future Scope of the Study

- The current study focuses solely on pre-service and in-service teachers' understanding of the intended learning outcomes in the science curriculum. Future studies might examine the level of awareness in the social sciences, mathematics, English, etc.
- Future research can concentrate on achieving the NCERT's recommended Expected Learning Outcomes.
- Research in the future can concentrate on the pedagogical strategies that are most effective in achieving the desired learning outcomes.
- Future research can also discover how to evaluate the attained intended learning results.

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