

Effectiveness of Outcome-Based Education on the Performance of Pre-Service Teachers in a National College of Education in Sri Lanka

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ABSTRACT

This research work was pursued to evaluate the performance of teacher trainees of English in a National College of Education in Sri Lanka to determine the objective; To investigate the effectiveness of Outcome-based Education (OBE) in enhancing student learning outcomes and instructional quality in a National College of Education. The researcher utilized experimental method and an observation schedule was employed as the primary data gathering tool. The respondents of the study were 163 teacher trainees, 82 from the experimental group and 81 from the control group respectively, and 14 lecturers to evaluate the performance of teaching practicum of teacher trainees through lesson observation, and the sample was selected on the basis of purposive sampling method. The observation schedule was designed using four OBE principles.; Clarity of focus (COF), Design down (DDW), Expanded opportunity (EOP), and High expectation (HEP). Mean comparison of experimental group was done with the control group using independent sample T test, and one sample test. In addition, data was analyzed using descriptive analysis. Findings indicate that the comparative analysis of the experimental (OBE) and the control (non-OBE) groups demonstrate a consistent and statistically significant difference in all the dimensions of teaching performance. Thus, teacher trainees from the experimental group outperformed the control group and OBE implementation led to significant improvements in achieving outcomes related to OBE principles contributing for more effective planning, teaching, and assessments. The study concludes that while OBE offers a robust framework for aligning educational practices with desired outcomes, its success heavily depends on constant application, continuous professional development and stakeholder engagement. Recommendation for future implementation strategies is; teacher trainees in the control group and the lecturers should be made aware of OBE approach through professional development training to increase their knowledge and skills in coping up with the learning teaching process. It is also recommended that future implementation strategies should be employed to enhance the sustainability and scalability of OBE in pre-service teachers.

Key words: Outcome-based Education, Teacher Trainees, Teacher Performance

INTRODUCTION

Education system in the 21st century across the globe is undergoing deep revolution driven by the need of the learners, accountability and relevance to rapidly changing socio-economic context. Therefore, students should be prepared for the 21st century, in order to acquire knowledge, and skills need to be successful due to globalization, technology, migration, international competition, changing markets, international environments and political changes (Tican & Deniz, 2019). Therefore, traditional content-based, teacher- centered approaches are being replaced by learner centered approaches that emphasize skill development and life- long learning competencies. Among these emerging approaches, Outcome-based Education (OBE) has gained considerable attention as a framework that aligns curriculum design, teaching methodologies, and assessment practices with clearly defined learning outcomes (Gurukkal, 2020). This approach is considered worldwide as a key mechanism for improving quality of education, ensuring the learners possess the competencies required for professional and societal demands (Iqbal et al., 2020). Teacher education plays a critical role in the successful implementation of such pedagogical innovations. Higher education institutes, especially education programmes frequently seek to enhance the quality of their teaching and to achieve the expected outcomes

(Baron & Boschee, 1996; Deneen, 2009; Spady, 1994; Webb, 2009). Recent global trends indicate a growing shift towards OBE in higher education and teacher training, driven by the need to align educational practices with international standards and sustainable development goals (Mahrishi et al., 2025). In Sri Lanka, teacher education is mainly provided by the National Colleges of Education (Sethunga, 2014), and the existing teaching methodology that is implemented in them is Competency-Based Education (CBE). It focuses mainly on the development of specific teaching competencies through structured training programs. While CBE emphasizes observable skills and performance standards, it may not fully encompass the broader, outcome-oriented perspective that integrates knowledge, skills, and attitudes within a holistic framework of learning outcomes (Sherzodovna, 2025).

Background of the study

In the context of teacher education, this paradigm shift seeks to equip pre-service teachers with the necessary skills, knowledge and attitudes to meet the demands of the 21st century classroom. National Colleges of Education (NCoEs) as the primary institutions responsible for training pre-service teachers, are currently integrating competency-based education into their curricula.

This study addresses the research problem; Is Outcome-based Education an effective approach in Teacher Education? Specifically, it examines how OBE influences the performances of English pre-service teachers in achieving the intended learning outcomes in their learning, while previous studies have highlighted the potential benefits of OBE in higher education (Killen, 2000; Harden, 2002). Despite its growing adoption, the effectiveness of OBE in teacher education, particularly within the Sri Lankan context remains under-explored. Consequently, this study intends to explore the relevance of transformation in relation to the context of teacher education. Furthermore, researchers have observed that limited studies have been conducted in implementation of Outcome-Based Education in teacher education. Accordingly, this study is going to investigate the effectiveness of Outcome-Based Education on the performance of pre-service teachers in a National College of Education in Sri Lanka. By focusing on the English teacher trainees, the study provides insights into both the pedagogical alignment and student engagement that underpin effective implementation of OBE.

Research Objective:

The specific objective of the study is;

- 1) To investigate the effectiveness of OBE in teacher performance in achieving learning outcomes.

Research Question

Research question of the study;

- 1) How to investigate the effectiveness of OBE in teacher performance in achieving learning outcomes?

LITERATURE REVIEW

Theoretical Framework

The OBE model is a transformative restructuring approach, though it demands extensive resources and careful planning. This approach is considered worldwide as a key mechanism for improving quality of education, ensuring the learners possess the competencies required for professional and societal demands (Iqbal et al., 2020). According to Killen (2000), the appropriateness of OBE system in the 21st century should be understood by its philosophy, premises, principles and instructional planning process. OBE is seen in three different perspectives: as a theory of education, as a systematic structure for education and as classroom practice (Killen, 2000). Eventually, the systemic structure and the practice going on in the classroom are associated to produce outcome-based education. When considering it as a theory of education OBE incorporates a set of beliefs and assumptions related to learning teaching and as the systemic structures in the activities designed. As Spady (1994) states, Outcome-based models incorporate several elements that work together to change how schools operate and facilitate learning to be successful for the students. Thus, the

elements in Outcome-based Education (OBE) are; paradigm, purposes, premises, principles and practices. As pointed out by Spady (1994), these premises are further developed in to four OBE principles named as Clarity of focus (COF); teachers should plan the lessons that enable the students to achieve the expected outcome, Design Down (DDW); learning experiences are “designed back-wards” (Wiggins & McTighe, 2005). Curriculum is designed from the anticipated learning outcomes. Curriculum, teaching methodology and assessments are linked directly to the significant outcomes the students are to achieve ultimately, High Expectation (HEP); teachers must design activities in order to expect high and challenging performance standards to encourage them to engage in -depth with the issues they are learning, Expanded Opportunity (EOP); According to Spady (1994), all the students cannot learn the same thing in the same way and at the same time, therefore, most of the students should be given good opportunities to achieve expected outcomes. Thus, among numerous emerging approaches, Outcome-based Education (OBE) has gained considerable attention as a framework that aligns curriculum design, teaching methodologies, and assessment practices with clearly defined learning outcomes (Gurukkal, 2020). As Spady (1994, 1998) points out, the model starts by identifying desired outcomes and then designing the curriculum, teaching methodologies, and resources to align with these goals. Curriculum design is influenced by various factors, including the nature of the discipline, the role of knowledge in cultural transmission, the skills needed to address societal challenges, cognitive development, and individual needs (Tritton, 2008). With these developments there is a growing interest in the meaning of outcomes and how they can address the contemporary needs of society (Gurukkal, 2018). The international trend in higher education is to transform education from teacher centered to learner centered model in which students know actually what can they do. Thus, OBE model aligns with the theory of constructive alignment. That is any learning or meaning is constructed by the students during their learning experience (Biggs, 2014; Biggs and Tang, 2011). Accordingly, the theory of constructive alignment emphasizes the combination of constructivism and instructional design (Biggs, 1996). According to figure 1, the curriculum and its’ expected outcomes, teaching methods, and the assessment tasks are aligned with each other to enable the learners to construct the meaning through learning activities. In the constructivism, students construct meaning through relevant learning activities (Biggs, 2003). Similarly, teaching methods and assessment tasks are aligned with the learning activities in order to achieve the expected learning outcomes of the course of study. Thus, constructive alignment is an outcome-based and learner centered approach.

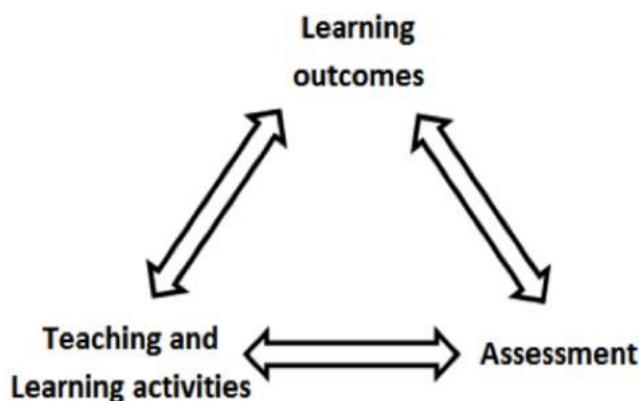


Figure 1. Constructive Alignment (Biggs, 1999)

Effectiveness of Outcome-based Education

According to Zhang (2019), research had been conducted on the outcome-based Education in the workplace communication curriculum of undergraduates to investigate the effectiveness of the approach in improving their communication skills which is one of the 21st-century skills of the teachers. Experimental research design had been employed with 595 pre-curriculum undergraduates as the population both as the control and the experimental groups. The self-rated questionnaire had been used to evaluate the teaching outcomes. It was revealed from the research findings that teachers played a leading role by facilitating and motivating the undergraduates as well as optimizing the teaching structure, improving teaching methods, and creating a conducive learning environment. Thus, the teachers’ inspiration had encouraged the students to improve their communication skills, but he has not accessed the evaluation of students’ satisfaction with the experimental

group and the curriculum. Similarly, Li and Jiang (2020) state that an experimental study conducted on teaching English writing with OBE in Chinese Senior High schools revealed that the English writing instruction model with OBE helped the students to improve their abilities in language production. It also stimulates, students' interest in learning and applying language and reduces their negative emotions. Experimental research design had been used for this research, selecting 163 students in the English group as control and experimental groups. Traditional Instruction mode and instruction mode under OBE had been used for them respectively. Students and teachers had been surveyed through questionnaires, interviews pre-test, and post-test. Similarly, Yasmin & Yasmeen (2021) conducted research on the viability of outcome-based Education in teaching English as a second language to chemical engineering students. They have employed a mixed-method approach and quasi-experimental method. A sample of 29 students was given pre-test and post-test. In addition, their mid-term and final term test marks had been collected. Semi-structured interviews were conducted with the faculty members to know the teachers' beliefs about the effectiveness of outcome-based Education. The results reveal that the OBE method considerably facilitated the learning of the students and caused them to attain the course learning outcomes. The results showed a positive effect of the OBE on the language learning skills of the students. Three of these research deal with two productive skills of English and have not accessed the evaluation of students' satisfaction. The gap between Zhang (2019), Li, and Jiang (2020), Yasmin & Yasmeen (2021) and the study of the author is expected to do is to evaluate the effectiveness of OBE and it is to be found through an observation schedule given to the lecturers of pre-service teachers' and to observe their lessons and award marks during teaching practicum. Zhang (2019), Li and Jian (2020) and Yasmin & Yasmeen (2021) have used experimental method as the research design. Similarly, the author also has used the experimental research design in the study. However, all the researchers have studied about undergraduates and high school students and none of the researchers has studied about student teachers which the author does.

RESEARCH METHODOLOGY

The study was conducted in an experimental design with quantitative methods to assess the effectiveness of the outcome-based approach over a period of one year, thus allowing systematic observation of changes in student performance under controlled conditions of instruction. Standard lesson plans, assessment tools and evaluation criteria were employed during the study, and implementation procedures were standardized to minimize researcher bias. Objective measures were also used for data collection and analysis to improve reliability and validity of the data collection tool. An observation schedule was utilized as the primary data collection tool in which the marks were ranging from 1-5, 6-10, 11- 15, 16-20, and 21-25 for the given criteria. Criteria for the observation schedule were selected from the observation schedule used in the college for observing lessons during teaching practicum of the teacher trainees. Criteria in the observation schedule were clustered according to the OBE principles, COF, EOP, HEP, and DDW. The study adopted convenient sampling method, which was of non-probability type. A Sample consisted of 163 teacher trainees that comprise 82 from the experimental and 81 from the control groups respectively and 14 lectures who evaluated their lessons during the teaching practicum. The data of the observation schedule given to the lecturers was utilized to evaluate the teaching performance of pre-service teachers and to examine the effectiveness of Outcome-Based Education (OBE) in their teacher training course. The experimental group received instruction under the author who implemented OBE method consistently for a period of one year, while the control group was taught by following competency- based approach, without exposure to OBE strategies. It is related to the objective, to investigate the effectiveness of OBE in English pre- service teachers.

The following conceptual models were advanced from the literature review. Three OBE principles out of four are used as independent variables and the effectiveness of Outcome-based Education is considered as the dependent variable. All the English lecturers were selected for the pilot test to check the reliability of the observation schedule. The existence of reliability was identified by evaluating the feedback of respondents. Cronbach's alpha values were considered to ascertain the reliability of the instrument. As per Walsh (1995), the value of Cronbach's alpha varies from 0 to 1 and a value of 0.9 indicates highly acceptable internal consistency reliability of the observation schedule. According to the reliability test (Table 2), Cronbach's alpha value for each variable is higher than 0.9, which confirms a high level of reliability.

Data Analysis

Demographic profile of the sample

Demographic data such as age, gender, residence (urban, rural), medium of instruction at G.C.E.(O/L) and G.C.E. (A/L) examinations, and the reasons for selecting teaching were considered. Table 1 discusses the demographic characteristics of the sample. The participant cohort demonstrated a relatively homogeneous age distribution, with the majority of pre-service teachers clustered between 24-26 years (see Table 4.1). The control group exhibited a mean age of 24.8 years ($SD = 1.4$), while the experimental group showed a slightly higher mean age of 25.1 years ($SD = 1.3$). This minimal age variance between groups ensures demographic equivalence and reduces potential confounding variables in the comparative analysis. The sample exhibited a pronounced gender imbalance reflective of the broader demographics in teacher education programs, with females comprising 95.7% of participants ($n=156$) and males representing only 4.3% ($n=7$). This distribution aligns with global trends in English language in teacher education and does not significantly impact the study's internal validity given, the balanced representation across both experimental conditions. Rural-origin participants constituted 81.6% of the sample, with urban participants representing 18.4%. This distribution reflects the typical demographic composition of National Colleges of Education in the study context. Regarding motivation for entering the teaching profession, 66.9% of participants indicated genuine interest in teaching, while 20.9% cited parental influence, and 8.0% reported limited alternative career options.

Table: 4.1 Demographic characteristics of the sample

Category		Count	Percentage	
	OBE	Non-OBE	OBE	Non-OBE
22-24	21	33	26%	41%
25-27	61	48	74%	59%
Male	2	5	2.4%	6.2%
Female	80	76	97.5 %	93.8%
Urban	19	11	23.2 %	13.6%
Rural	63	70	76.8%	86.4%

Source: Author's Compilation Based on the Survey, 2022

Education Related Information of the Respondents Graph 4.1: Medium of instruction at G.C.E.(A/L) examination

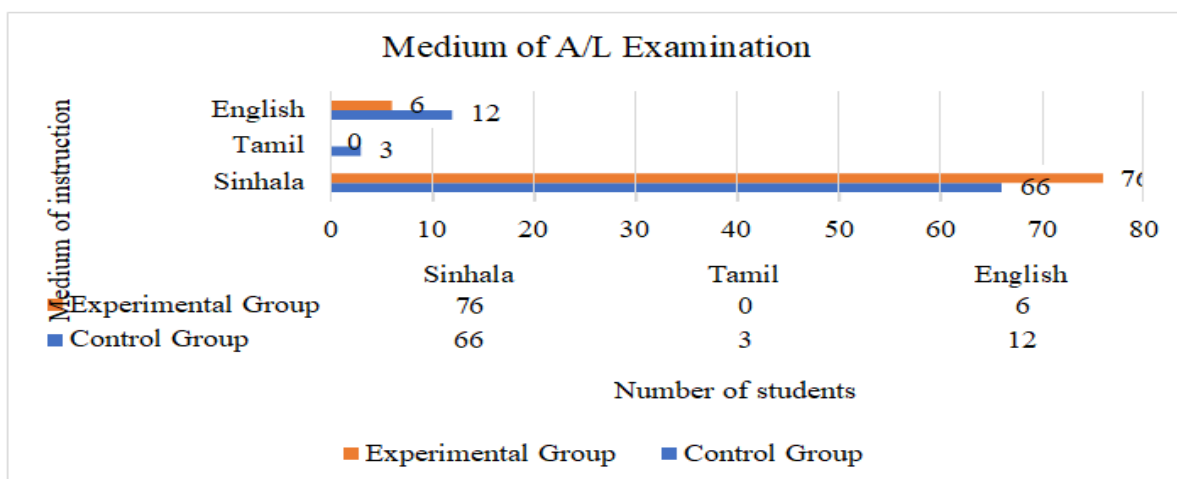


Table 1: Medium of Instruction of Pre-Service Teachers (Author Developed, 2025)

Reason to select teaching profession

Table: 4.2 Reason to select teaching profession

Reason to select the teaching profession		
	OBE	Non-OBE
Really like	61	48
Parental Influence	14	20
No other Option	4	9
Due to Benefits in Teaching	3	4

Source: Author's Compilation Based on the Survey, 2022

The table 4.2 illustrates the reasons pre-service teachers selected the teaching profession

Table: 4.3 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
COF	163	3.57	21.57	14.3663	4.00425
EOP	163	4.20	21.80	15.1215	4.21300
DDW	163	3.33	22.33	14.6237	4.16023
Valid N (listwise)	163				

Source: Author's Compilation Based on the Survey, 2022

The results indicate that participants reported moderately high levels across all three dimensions. Specifically, clarity of focus (COF) recorded a mean score of 14.37 (SD = 4.00), with observed values ranging from 3.57 to 21.57. Expanded opportunity (EOP) showed a slightly higher mean of 15.12 (SD = 4.21), with scores ranging between 4.20 and 21.80. Similarly, design down (DDW) had a mean of 14.62 (SD = 4.16), with values ranging from 3.33 to 22.33. The relatively similar standard deviations across all constructs suggest a consistent level of variability in respondents' perceptions.

Table: 4.4 Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
COF	.0	81	11.9312	3.08924	.34325
	1.0	82	16.7718	3.29470	.36384
EOP	.0	81	12.4395	3.22156	.35795
	1.0	82	17.7707	3.30912	.36543

DDW	.0	81	12.0082	3.35658	.37295
	1.0	82	17.2073	3.14472	.34728

Source: Author's Compilation Based on the Survey, 2022

Table : 4.5 Independent Sample T- Test Levene's Test for Equality of Variances t-test for Equality of Means

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
COF	Equal variances assumed	3.610	.059	-9.673	161	.000	-4.84056	.50040	-5.82875	-3.85237
	Equal variances not assumed			-9.677	160.566	.000	-4.84056	.50020	-5.82838	-3.85274
EOP	Equal variances assumed	1.229	.269	-10.420	161	.000	-5.33123	.51162	-6.34158	-4.32087
	Equal variances not assumed			-10.422	160.966	.000	-5.33123	.51154	-6.34141	-4.32104
DDW	Equal variances assumed	.769	.382	-10.206	161	.000	-5.19909	.50940	-6.20505	-4.19312
	Equal variances not assumed			-10.202	160.041	.000	-5.19909	.50960	-6.20550	-4.19267

Source: Author's Compilation Based on the Survey, 2022

An independent samples t-test was conducted to examine the differences between the control group (Group 0) and the experimental group (Group 1) in relation to clarity of focus (COF), expanded opportunity (EOP), and design down (DDW) within the context of outcome-based education.

The results indicate a statistically significant difference between the two groups across all three constructs. For clarity of focus (COF), the experimental group ($M = 16.77$, $SD = 3.29$) scored significantly higher than the control group ($M = 11.93$, $SD = 3.09$), $t(161) = -9.67$, $p < .001$, with a mean difference of -4.84 and a 95% confidence interval ranging from -5.83 to -3.85. Similarly, expanded opportunity (EOP) showed a significant difference between the experimental group ($M = 17.77$, $SD = 3.31$) and the control group ($M = 12.44$, $SD = 3.22$), $t(161) = -10.42$, $p < .001$, with a mean difference of -5.33 and a 95% confidence interval of -6.34 to -4.32. For design down (DDW), the experimental group ($M = 17.21$, $SD = 3.14$) also significantly outperformed the control group ($M = 12.01$, $SD = 3.36$), $t(161) = -10.21$, $p < .001$, with a mean difference of -5.20 and a 95% confidence interval between -6.21 and -4.19.

Levene's test confirmed that the assumption of homogeneity of variances was met for all variables ($p > .05$), indicating that equal variances could be assumed in the interpretation of results.

Table : 4.6 Descriptive Statistics

Group		N	Minimum	Maximum	Mean	Std. Deviation
.0	COF	81	3.57	19.71	11.9312	3.08924

	EOP	81	4.20	21.00	12.4395	3.22156
	DDW	81	3.33	21.00	12.0082	3.35658
	Valid N (listwise)	81				
1.0	COF	82	8.00	21.57	16.7718	3.29470
	EOP	82	9.00	21.80	17.7707	3.30912
	DDW	82	6.00	22.33	17.2073	3.14472
	Valid N (listwise)	82				

Source: Author's Compilation Based on the Survey, 2022

The descriptive statistics demonstrate notable differences between the control group (Group 0) and the experimental group (Group 1) across the three constructs: clarity of focus (COF), expanded opportunity (EOP), and design down (DDW).

For the control group ($n = 81$), the mean scores were relatively lower, with COF ($M = 11.93$, $SD = 3.09$), EOP ($M = 12.44$, $SD = 3.22$), and DDW ($M = 12.01$, $SD = 3.36$). The range of scores indicates moderate variability, suggesting that participants in the control condition experienced comparatively lower levels of clarity, opportunity, and design-oriented practices.

In contrast, the experimental group ($n = 82$) exhibited substantially higher mean scores across all three variables. Specifically, COF ($M = 16.77$, $SD = 3.29$), EOP ($M = 17.77$, $SD = 3.31$), and DDW ($M = 17.21$, $SD = 3.14$) reflect consistently elevated levels of these constructs. The higher minimum values in this group further indicate that even the lowest-scoring participants in the experimental condition reported stronger outcomes than many in the control group.

Table : 4.7 One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
COF	163	14.3663	4.00425	.31364
EOP	163	15.1215	4.21300	.32999
DDW	163	14.6237	4.16023	.32585

Source: Author's Compilation Based on the Survey, 2022

Table:4.8 One-Sample t-Test

	Test Value = 0					
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
COF	45.806	162	.000	14.36635	13.7470	14.9857

EOP	45.824	162	.000	15.12147	14.4698	15.7731
DDW	44.878	162	.000	14.62372	13.9803	15.2672

Source: Author's Compilation Based on the Survey, 2022

A one-sample t-test was conducted to determine whether the mean scores for clarity of focus (COF), expanded opportunity (EOP), and design down (DDW) differed significantly from the hypothesized test value of zero. The results revealed that all three constructs had mean scores that were statistically and substantially higher than zero. Specifically, clarity of focus (COF) recorded a mean of 14.37 (SD = 4.00), which was significantly different from zero, $t(162) = 45.81$, $p < .001$, with a 95% confidence interval ranging from 13.75 to 14.99. Similarly, expanded opportunity (EOP) demonstrated a mean of 15.12 (SD = 4.21), $t(162) = 45.82$, $p < .001$, with a 95% confidence interval of [14.47, 15.77]. Design down (DDW) also showed a statistically significant result, with a mean of 14.62 (SD = 4.16), $t(162) = 44.88$, $p < .001$, and a 95% confidence interval between 13.98 and 15.27.

Table: 4.9 One-Sample Statistics

Group	N	Mean	Std. Deviation	Std. Error Mean
.0 COF	81	11.9312	3.08924	.34325
EOP	81	12.4395	3.22156	.35795
DDW	81	12.0082	3.35658	.37295
1.0 COF	82	16.7718	3.29470	.36384
EOP	82	17.7707	3.30912	.6543
DDW	82	17.2073	3.14472	.34728

Source: Author's Compilation Based on the Survey, 2022

Table: 4.10 One-Sample t-Test

Group		Test Value = 0					
		T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
						Lower	Upper
.0	COF	34.760	80	.000	11.93122	11.2481	12.6143
	EOP	34.752	80	.000	12.43951	11.7272	13.1519
	DDW	32.198	80	.000	12.00823	11.2660	12.7504
1.0	COF	46.097	81	.000	16.77178	16.0479	17.4957
	EOP	48.630	81	.000	17.77073	17.0436	18.4978
	DDW	49.549	81	.000	17.20732	16.5163	17.8983

Source: Author's Compilation Based on the Survey, 2022

The results of the one-sample t-test provide important insight into the role of clarity of focus (COF), expanded opportunity (EOP), and design down (DDW) in the context of outcome-based education (OBE). In both the control and experimental groups, all three constructs were found to be significantly greater than zero ($p < .001$), indicating that these factors are meaningfully present and relevant within the educational setting. However, a clear distinction emerges between the two groups.

In the control group, the mean scores for COF ($M = 11.93$), EOP ($M = 12.44$), and DDW ($M = 12.01$) suggest moderate levels of implementation of OBE principles. While these values are statistically significant, they indicate that the foundational elements of outcome-based education are present but not strongly emphasized. In contrast, the experimental group demonstrates substantially higher mean scores for COF ($M = 16.77$), EOP ($M = 17.77$), and DDW ($M = 17.21$), reflecting a stronger integration of these principles.

Quintile Analysis

Table 4.11 below compares seven indicators of Clarity of Focus between the experimental (1) and control (0) groups. The experimental group has significantly higher means than the control group across all items. Differences range from 3.043 (TPCF6) to 5.864 (TPCF1), indicating substantial gaps. TPCF1 shows the largest gap (17.963 vs. 12.099; = 5.864). (TPCF6) has the smallest gap (13.524 vs. 10.481; = 3.043) and the lowest overall scores for both groups. (TPCF3), (TPCF4), and (TPCF5) consistently score high for Experimental Group (16.5-17.5) but low for Control Group (11.5-12.5). This suggests that the experimental group consistently performs better in clarity of focus across all measured aspects.

Table 4.11: Teacher Performances – Clarity of Focus (TPCOF)

	Group	N	Mean
TPCOF1	1.0	82	17.963
	.0	81	12.099
TPCOF2	1.0	82	16.963
	.0	81	11.790
TPCOF3	1.0	82	16.646
	.0	81	11.642
TPCOF4	1.0	82	17.122
	.0	81	11.531
TPCOF5	1.0	82	17.524
	.0	81	12.556
TPCOF6	1.0	82	13.524
	.0	81	10.481
TPCOF7	1.0	82	17.659
	.0	81	13.420

Source: Author's Compilation Based on the Observation Schedule, 2022

Table 4.12: Teacher Performance - Design Down (TPDDW)

	Group	N	Mean
TPDDW1	1.0	82	16.976
	.0	81	12.432
TPDDW2	1.0	82	17.878
	.0	81	11.765
TPDDW3	1.0	82	16.768
	.0	81	11.827

Source: Author's Compilation Based on the Observation Schedule, 2022

With reference to the table 4.12 compares three of Design Down (TPDW1, TPDW2, and TPDW3) across the two groups, with sample sizes (N) and mean scores for each group. The experimental group outperforms the control group across all three metrics by a substantial margin. The largest gap is in TPDW2 (6.113), followed by TPDW3 (4.941) and TPDW1 (4.544). TPDW2 has the highest mean in Experimental Group (17.878) and the largest group difference (6.113), suggesting it is the most distinguishing metric. TPDW1 and TPDW3 show similar trends but with smaller gaps (both 4.5-4.9 points). Experimental Group consistently demonstrates stronger performance in all aspects of Teacher Performance Design Down. The significant differences suggest systematic factors distinguishing the groups (e.g., training, experience, or institutional support). TPDW2 may be a critical area for intervention if control group requires improvement.

Table 4.13: Teacher Performance - Expanded Opportunity (TPEOP)

	Group	N	Mean
TPEOP1	1.0	82	17.256
	.0	81	12.160
TPEOP2	1.0	82	17.890
	.0	81	11.346
TPEOP3	1.0	82	18.524
	.0	81	13.494
TPEOP4	1.0	82	17.659
	.0	81	12.642

Source: Author's Compilation Based on the Observation Schedule, 2022

Table 4.13 compares four metrics of Expanded Opportunity (TPEP1, TPEP2, TPEP3, and TPEP4) across the two groups. Again, the experimental group outperforms the control group across all four TPEP metrics. Differences range from 5.017 (TPEP4) to 6.544 (TPEP2), indicating robust advantages. TPEP2 shows the greatest performance gap (6.544), with Experimental Group averaging 17.890 vs. Control Group at 11.346. This suggests that TPEP2 is the most sensitive metric for distinguishing group performance. The experimental group achieves its highest mean in TPEP3 (18.524), while the control group peaks at TPEP4 (12.642). TPEP4

has the narrowest difference (5.017), though this remains statistically significant. Experimental Group's consistent edge suggests foundational strengths (e.g., better resources, training, or institutional support) in creating expanded opportunities. The large gap in TPEP2 highlights it as a priority area for interventions targeting Control Group. Experimental Group excels in all dimensions, with TPEP3 being their strongest area (18.524).

Table 4.14: Teacher Performance - High Expectation (TPHE)

	Group	N	Mean
TPHE1	1.0	82	18.171
	.0	81	12.383

Source: Author's Compilation Based on the Observation Schedule, 2022

Table 4.6 compares the metric of High Expectation (TPHE1) across the two groups. Experimental Group reports a markedly higher mean score (18.171) compared to the Control Group (12.383), with a substantial difference of 5.788 points. This indicates the Experimental Group demonstrates stronger performance in fostering high expectations. These results reinforce a consistent pattern of Experimental Group dominance across all teacher performance domains analyzed.

Lesson Observation of pre-service Teachers

Quartile Category of the performance of Pre-service Teachers Table 4.15: Quartile Category – Control

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	37	45.7	45.7	45.7
	2.00	27	33.3	33.3	79.0
	3.00	16	19.8	19.8	98.8
	4.00	1	1.2	1.2	100.0
	Total	81	100.0	100.0	

Source: Author's Compilation Based on the Observation Schedule, 2022

Table:4.16 Quartile Category- Experimental

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	5	6.1	6.1	6.1
	2.00	15	18.3	18.3	24.4
	3.00	24	29.3	29.3	53.7
	4.00	38	46.3	46.3	100.0
	Total	82	100.0	100.0	

Source: Author's Compilation Based on the Observation Schedule, 2022

Table:4.17 Quartile Category Experimental vs Control

	Q1	Q2	Q3	Q4
	1	2	3.0	4.0
Exp	5	15	24.0	38.0
Non-Exp	37	27	16	1

Source: Author's Compilation Based on the Observation Schedule, 2022

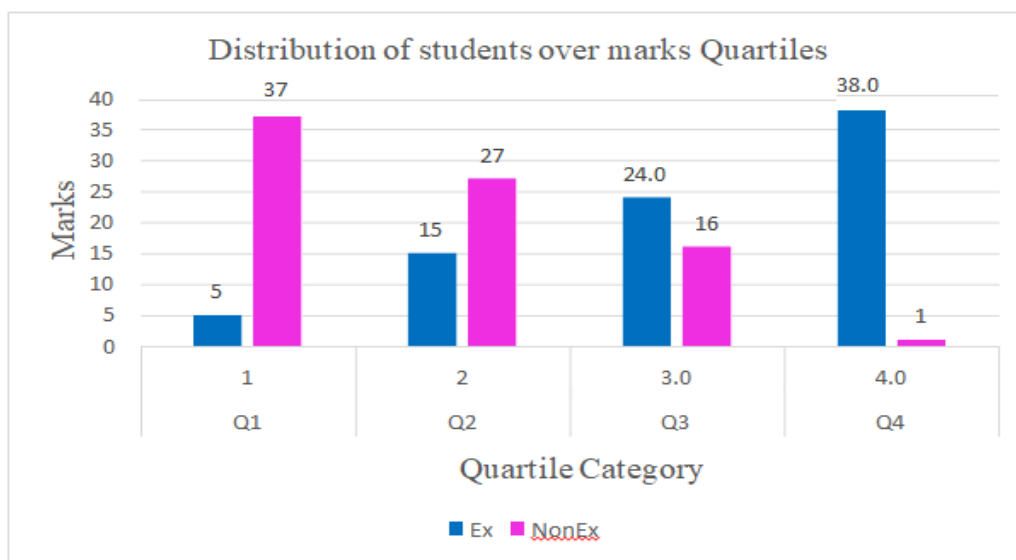
Q1 = 1 – 5

Q2 = 6 – 10

Q3 = 11– 15

Q4 = 16 – 20

Graph 4.26: Distribution of marks Quartiles Experimental vs Control



Source: Author's Compilation Based on the Observation Schedule, 2022 Quartile Category – Control Group

- Most participants in the control group are concentrated in the lower quartiles (Q1 and Q2).
- Q1 (scores 1–5): 37 participants (45.7%)
- Q2 (scores 6–10): 27 participants (33.3%)
- Q3 (scores 11–15): 16 participants (19.8%)
- Q4 (scores 16–20): Only 1 participant (1.2%)
- Observation: The majority (79%) of control group participants fall within Q1 and Q2, indicating lower performance levels with very few reaching the highest quartile (Q4).

Quartile Category – Experimental Group

- In contrast, the experimental group shows a strong shift toward the higher quartiles (Q3 and Q4).

- Q1 (scores 1–5): 5 participants (6.1%)
- Q2 (scores 6–10): 15 participants (18.3%)
- Q3 (scores 11–15): 24 participants (29.3%)
- Q4 (scores 16–20): 38 participants (46.3%)
- Observation: Nearly half of the experimental group reached Q4, and over 75% of participants are in Q3 or Q4. This indicates substantially higher performance levels compared to the control group.

In comparison of the results between the control group and the experimental group;

- Control group: Skewed toward Q1 and Q2 (low scores).
- Experimental group: Skewed toward Q3 and Q4 (high scores).

The intervention/treatment applied to the experimental group appears to have had a strong positive effect, shifting performance from lower quartiles (Q1-Q2) to higher quartiles (Q3-Q4). The distribution of participants across quartile categories revealed clear differences between the control and experimental groups. In the control group, the majority of the participants were grouped in the lower quartiles. Specifically, 45.7% fell within Quartile 1 (scores 1-5) and 33.3% within Quartile 2 (scores 6-10). Only 19.8% reached Quartile 3 (scores 11-15), while a minimal 1.2% advanced to Quartile 4 (scores 16-20). This indicated that majority of the participants in the control group demonstrated relatively low level of performance, with nearly four – fifths (79%) scoring within the two lowest quartiles.

In contrast, the experimental group displayed a noticeable difference in the distribution pattern, shifting to the higher quartiles. While only 6.1% and 18.3% of participants were clustered in quartile 1 and 2, respectively. Accordingly, a considerable proportion achieved higher scores: 29.3%, were in Quartile 3 and nearly half (46.3%) were in Quartile 4. Overall, over three quarters (75.6%) of experimental participants fell within the top two quartiles.

These results suggest that the intervention applied in the experimental condition was effective in shifting performance upward. Whereas the outcomes of the control group were concentrated in the lower quartiles, and the experimental group demonstrated a dramatic progression into the higher quartiles, with the largest proportion of participants reaching Quartile 4. These evidences illustrate the positive impact of the intervention on the participants' performance.

FINDINGS AND DISCUSSION

The findings of the study reveal strong empirical support for the effectiveness of Outcome-Based Education (OBE) in enhancing the performance of pre-service teachers at a National College of Education in Sri Lanka. The comparative analysis of the experimental (OBE) and the control (non-OBE) groups demonstrate a consistent and statistically significant difference in all the dimensions of teaching performance. In considering the OBE principal Clarity of focus, the mean scores of the experimental group were noticeably higher for all seven indicators. The degree of these differences is from 3.00 to 5.9 points, suggests that pre-service teachers who underwent OBE experience were more successful in aligning their instructional practices, and activities, with well-defined learning outcomes. The trainees were more effective in creating student-centered learning environments, using diverse teaching strategies and techniques, and incorporating relevant assessment methods. Similarly, the results on the OBE principal Design down also assist the effectiveness of OBE. The experimental group constantly outperformed the control group in all the indicators. The identified difference is from 4.5 to 6.1 points. It reveals that pre-service teachers learned under OBE were capable in planning lessons starting from intended learning outcomes and aligning learning activities and instructions to achieve these expected learning outcomes. Out of all, COF indicates the strongest performance for the use of guided discovery learning. Overall, the findings provide empirical support for the importance of COF, EOP, and DDW as critical drivers of outcome-based education. The significantly higher levels observed in the experimental

group suggest that interventions targeting these factors can enhance the effectiveness of OBE, ultimately leading to improved educational outcomes.

This result suggests that OBE promotes deeper cognitive engagement and active knowledge construction among the learners. The results further emphasize the importance of backward curriculum design in promoting coherence between relevant instructions and the effectiveness of the lesson. The OBE principle, expanded opportunity also illustrated great improvements in the experimental group showcasing that implementation of OBE adopts inclusive and supportive learning environments by providing more opportunities for interaction, exploration, and remedial support to the students. The group differences were 5.0 to 6.5 points, and indicates that OBE not only enhances teaching practices, but also promotes fair learning experiences.

Furthermore, the high scores have been obtained for student interaction and exploratory learning which suggest that OBE contributes enhancing critical thinking and collaboration among the learners that are essential for 21st century education. Further, regarding the principle, High expectation (HEP), the experimental group was superior than the control group with a large mean difference of almost 5,8 points. This outcome suggests that OBE promotes teachers to establish and maintain higher academic standards that enable the students to do their best. The emphasis on clear learning outcomes and criteria for success seems to create a learning environment that supports students' achievement while providing challenging activities.

The analysis of quartile distribution further indicates the effectiveness of OBE. The control group was largely concentrated in the lower performance quartile, with almost 79% of participants in Q1 and Q2. The experimental group on the other hand, demonstrated a significant move to higher levels of performance, with over 75% of the group falling into Q3 and Q4 and close to half reaching the highest quartile. This noticeable change in the distribution of performance clearly demonstrate the transformative effect of OBE on the practice of teaching and learning outcomes. These results can be positioned within the context of existing theory and empirical research. The findings steadily support the key principles of OBE as described by Spady (1994), especially with respect to clarity of focus (COF), design down (DDW), expanded opportunity (EOP) and high expectations (HEP). The results of the experimental group suggest, how these principles are operated into effective classroom practice. Also, the results are consistent with the theory of constructive alignment of Biggs (1999), which asserts that meaningful learning is achieved when learning outcomes, learning activities and assessment tasks are consistently aligned. This theory is operationalized in the OBE framework where all instructional components are carefully aligned to accomplish the expected outcomes thus improving teaching effectiveness and student learning. The present study also confirms previous empirical research on OBE, and demonstrates that OBE improves student engagement and interaction by enhancing instructional practices, as suggested by Zhang (2019). Similarly, results are consistent with those of Li and Jiang (2020) who found that OBE enhances language learning outcomes and student motivation. Yasmin and Yasmeen (2021) provide further support for the positive impact of OBE on the achievement of learning outcomes. However, this study provides an important contribution to the literature by using pre-service teachers instead of another target group, thus filling an important gap in OBE research. The findings of the study offer valuable insights related to the effects of OBE on authentic classroom practices in teacher education through an examination of teaching practicum performance. These findings have significant implications for teacher education and education policy. The demonstrated effectiveness of OBE highlights its value as a strong and reliable framework for guiding educational practice and improving quality of teacher education programmes. Through learner centered pedagogy, instructional alignment, and high academic standards, OBE prepares pre-service teachers with the skills and competencies they need for 21st century Classroom. However, OBE can only be successfully implemented with systemic support, including designing curriculum, professional development, and with the institutional support.

RECOMMENDATIONS

Based on these findings it is recommended that teacher educators should formally incorporate OBE principles into their curricula and ensure that all teaching practices are aligned with clearly designed learning outcomes. Both lecturers and pre-service teachers need to be given effective training in OBE practices (formulating outcomes, backward design, and aligning assessments with them to achieve the expected learning outcomes) through continuous professional development programmes. Classroom practices should consist of interactive

and student-centered strategies such as guided discovery learning, collaborative activities, and diverse instructional methods. Well planned remedial programmes should also be developed to help learners who face difficulties in achieving expected outcomes. At the policy level, educational authorities need to provide clear guidelines and resources to facilitate the incorporation and sustainability of OBE. There should also be monitoring, and evaluation techniques to ensure the quality and consistency of OBE implementation. In addition, future research should investigate long -term effects such as life -long education, sustainability in education, teacher efficacy, and student achievement, and its relevance to various subject areas and educational settings.

CONCLUSION

This study proves the effectiveness and the transformative impact of Outcome-based Education in teacher education with strong evidence. When considering the analyzed results of the experimental group, teacher trainees in the group constantly outperformed the control group in all the performance indicators, and there was a significant transformation towards higher achievement levels. The findings illustrate the potential of OBE in enhancing the quality of teaching and learning outcomes. OBE ensures an interconnected, student-centered learning environment that adopts academic excellence and professional competence by aligning curriculum, instructions and assessments with clearly designed outcomes. The implementation of OBE, however, is a well- planned process and needs continuous professional development and institutional support. As education systems are advanced to meet the needs of the 21st century, Outcome-Based Education (OBE) offers a comprehensive and conceptually well-grounded theoretically sound context to prepare competent, reflective, practically upgraded, and outcome-oriented teachers to the system.

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Appendix 1. Observation Schedule

TPCOF1	Students are facilitated in learning rather than the teacher talking.
TPCOF2	The trainee has changed the direct instruction mode to the facilitation mode.
TPCOF3	Teacher trainee follows different teaching strategies to achieve learning outcomes in the lesson.
TPCOF4	The trainee has used assessment appropriately in the lesson to evaluate the ability of the students to demonstrate the outcomes
TPCOF5	Trainee demonstrates good communication skills (Appropriate classroom language) during the lesson.
TPCOF6	Uses clear instructions and questioning techniques during the lesson.
TPCOF7	Knowledge gained by students through the lesson can be used in their real-life situation.
TPEOP1	Students are given more opportunities in their learning and teaching process.
TPEOP2	Provides remedial teaching activities for the students who didn't reach the expected level.
TPEOP3	More student-student and teacher-student interactions are encouraged.
TPEOP4	Gives opportunities for the students to explore knowledge.
TPHEP1	Activities given in the lesson are either high in standard or relevant to the level of the students.
TPDDW1	Outcomes given in the lesson can be achieved through the given activities.
TPDDW2	Uses more guided discovery activities rather than encouraging competition to achieve expected learning outcomes.
TPDDW3	Assessments given in the lesson are relevant to the learning outcomes.

Appendix 2

Reliability Statistics- Clarity of Focus (COF)	
Cronbach's Alpha	N of Items
.937	7

Reliability Statistics – Expanded Opportunity (EOP)

Cronbach's Alpha	N of Items
.889	4

Reliability Statistics – Design Down (DDW)

Cronbach's Alpha	N of Items
.867	3