



Re-imagining Curriculum Alignment in Virtual Teacher Education: An Analysis of Program Learning Outcome Integration Across Courses at the Virtual University of Pakistan

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Abstract: This paper addresses the comparison of course learning Outcomes (CLOs) and the institutional Program Learning Outcomes (PLOs) of 272 in 34 minor and interdisciplinary courses of the B.Ed program at Virtual University of Pakistan. The study used the mixed-methods sequential explanatory design to construct CLOs as qualitative thematic content analysis comparing the same to PLOs. Specific themes are pedagogy, assessment, ethics and digital literacy that were manually mapped through validated coding schemes through an excel/NVivo matrices. The quantitative phase used descriptive statistics to issue frequencies of alignment. The findings demonstrate that the core teaching areas are well aligned (PLO1-PLO5), but there is a lack of incorporation of the two PLOs: digital competence (PLO6) and innovation/social responsibility (PLO7). A Three-Level Curriculum Model is then suggested in response to improve virtual teacher training. The implications made by the study are focused on strategic restructuring of the curriculum, whereas its relevance is the ability to provide the replicable model of the outcome-based education quality assurance in the institutions of distance education.

Keywords: Program Learning Outcomes (PLOs), Course Learning Outcomes (CLOs), Digital Literacy, Curriculum Alignment

Received : 22 September 2025

Revised : 21 October 2025

Accepted : 30 October 2025

Published : 30 December 2025

TO CITE THIS ARTICLE:

Munawwar Ahmed, Darakhshan Muslim & Meimoon Riaz (2025). Re-imagining Curriculum Alignment in Virtual Teacher Education: An Analysis of Program Learning Outcome Integration Across Courses at the Virtual University of Pakistan, *Society and Culture Development in India*, 5: 2, pp. 317-324. <https://doi.org/10.47509/SCDI.2025.v05i02.08>

Introduction

Misalignment between Course Learning Outcomes (CLOs) and Program Learning Outcomes (PLOs) has now become one of the key issues of the contemporary outcome-based education systems in various parts of the world. Such a connection will make sure that the components of a particular course build towards a larger set of competencies

expected of those who graduate the program (Biggs & Tang, 2011; Harden, 2007). With the growing use of virtual and distance education systems, especially in developing countries, it becomes quite necessary to consider whether online-based teacher education curriculum is consistent, coherent, and accountable in their course of preparing future educators (Ali et al., 2021; Malik & Zohair, 2020). In Pakistan, the Virtual University of Pakistan (VUP) is an early entrant into the provision of fully online programs up to undergraduate and graduate degree programs in the field of education. Nevertheless, although its role continues to become relevant, there are rare empirical evidence that focuses on the systematic integration of course-specific purposes with general program learning objectives in such a virtual design (Shah & Ud Din, 2018). The VUP Bachelor of Education (B.Ed.) program has both major and interdisciplinary studies where every course has the aim of molding certain competency in future teachers. However, it is not well researched how much these courses are correlated and contribute to PLOs, including digital literacy, pedagogy, innovation, collaboration, and social responsibility. Thus, the given study seeks to criticise the PLO-CLO integration in the B.Ed. program of the Virtual University of Pakistan combining the mixed-methods sequential explanatory design of the research. This study bridges this disconnect in the virtual teacher education setting since it maps the thematic representation of CLOs in comparison to the institutional PLO and also measures the degree of alignment between the two.

Problem Statement

Although the significance of curriculum alignment in higher education, and in teacher preparation programs is increasingly acknowledged (Harden, 2007; Mahajan & Singh, 2022), little research has been done on learning outcome alignment in virtual institutions. The assurance of teacher education program strength in online settings has become an urgent issue in Pakistan where both public and private universities adopt online modalities more and more (Malik & Zohair, 2020). Unless there is empirical mapping of PLO integration in relation to the individual courses, these programs face a risk of inconsistency in the development of the various skills and this leaves gaps in the pedagogical, digital and ethical competence of graduates. Because of this misalignment, the accreditation process alone can be undermined. And the quality of teaching provided to future students by a new generation of teachers who previously attended these classes can as well be compromised. That is why the present research was conducted.

Research Objectives

- To analyze alignment of Program Learning Outcomes across major and interdisciplinary courses in the B.Ed.
- To identify strengths and gaps in the curriculum, particularly in addressing higher-order skills such as innovation, digital pedagogy, and social responsibility
- To assess how well interdisciplinary courses support the holistic development of future teachers in an online learning environment
- To suggest an improved curriculum model that ensures balanced PLO integration suitable for virtual teacher preparation

Material and Method

By utilizing a mixed-methods sequential explanatory design the present study set out to analyze the correlation between Course Learning Outcomes (CLOs), and Program Learning Outcomes (PLOs) of the B.Ed program of the Virtual University of Pakistan. On the first stage, the nature of the CLOs and PLOs was explored with the help of the qualitative analysis. CLOs of every course were coded manually to collect the focus points, such as pedagogy, assessment methods, technology application, communication, teamwork, and ethical issues. The coded themes were then analysed with respect to the described PLOs to determine to which extent the course-level objectives contributed to realisation of the broader program outcomes. During the next quantitative step, the number of thematic correspondence of CLOs to PLOs was counted on every course. These findings were organized and presented in a matrix. A descriptive statistic including frequency counts and percentages was used to explain the level of alignment at the curriculum. All 34 courses in the B.Ed program were used in the study. Purposive sampling was used to make sure that all the core and interdisciplinary courses were reviewed. A structured analysis sheet with course code, title, CLOs, and institutional PLOs was used as the instruments to collect data. NVivo or excel was used to code to ensure accuracy. To increase reliability, coded data was validated with course outlines in official documents, and coding scheme was checked independently by two experts in the field of education. There was an audit record kept on the way to record all the decisions made and improve the openness of the analysis. Since the nature of the study was the use of published curriculum documents in the public domain which did not entail the study of human subjects, there was no formal need to use ethical approval and obtain the consent of the subjects.

Results Phase I

Qualitative Analysis

PLO	Theme	Sub-Themes (Inferred from Course Titles)	Total Mapping Weight	Number of Courses Mapped
PLO1	Foundations of Education Knowledge	Educational philosophy, foundations, developmental psychology	732	37
PLO2	Pedagogical Content Knowledge	Subject: specific pedagogy, teaching methods	595	36
PLO3	Instructional Planning & Strategies	Curriculum planning, instructional design, lesson preparation	761	38
PLO4	Assessment & Evaluation	Formative/summative assessment, test development, feedback methods	739	38
PLO5	Ethics and Professionalism	Values education, professional conduct, inclusive teaching, civic duties	602	38
PLO6	Digital Competence	Use of ICT, media tools, communication platforms	70	10
PLO7	Innovation & Social Responsibility	Reflective practice, social work, leadership, mass communication	301	10

There is a high level of focus on the instructional planning (PLO3), assessment (PLO4), and foundational knowledge (PLO1) which means that the core teaching competences are well addressed. There is a moderate concern of ethics and pedagogy (PLO2 & PLO5) to guarantee professional and subject based skills. Nevertheless, digital competence (PLO6) and innovation/social responsibility (PLO7) are deficient, and it is stated that future teachers are not prepared to integrate technology and influence the society completely. The B.Ed. program of the Virtual University of Pakistan closely matches the principles of teaching competence but does not sufficiently incorporate the concept of digital literacy and an innovation-centered achievement.

Results phase II

Quantitative Analysis

Course Code	Course Title	Category	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7
EDU101	Foundations of Education	Major	30	20	20	20	10	0	0
EDU301	General Method of Teaching	Major	25	15	25	20	15	0	0

Course Code	Course Title	Category	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7
EDU305	Classroom Management	Major	20	10	30	20	20	0	0
EDU405	Classroom Assessment	Major	25	15	25	20	15	0	0
EDU430	ICT in Education	Major	20	20	20	20	10	10	0
EDU403	Art, Crafts and Calligraphy	Major	10	30	20	20	20	0	0
EDU516	Teaching of English	Major	20	20	20	20	20	0	0
EDU510	Teaching of Mathematics	Major	25	15	25	20	15	0	0
EDU501	School, Community and Teacher	Major	20	20	20	20	20	0	0
GSC201	Teaching of General Science	Major	25	15	25	20	15	0	0
TPTA519	Teaching Practice – I	Major	10	20	30	20	20	0	0
EDU431	Test Development & Evaluation	Major	25	15	25	20	15	0	0
EDU411	Teaching of Urdu	Major	20	20	20	20	20	0	0
PSY406	Educational Psychology	Major	22	0	11	44	22	0	1
EDU303	Child Development	Major	25	15	25	20	15	0	0
EDU410	Teaching of Literacy Skills	Major	20	20	20	20	20	0	0
EDU601	Philosophy of Education	Major	30	20	20	20	10	0	0
EDU401	Contemporary Issues and Trends in Ed.	Major	25	15	25	20	15	0	0
EDU304	Introduction to Guidance and Counselling	Major	20	20	20	20	20	0	0
EDU512	Teaching of Islamic Studies	Major	20	20	20	20	20	0	0
EDU406	Critical Thinking and Reflective Practice	Major	20	20	20	20	20	0	0
EDU402	Curriculum Development	Major	25	15	25	20	15	0	0
EDU515	Teaching of Geography	Major	20	20	20	20	20	0	0
EDU433	Professionalism in Teaching	Major	20	20	20	20	20	0	0
EDU407	Research Methods in Education	Major	20	20	30	20	10	0	0
EDU604	Comparative Education	Major	25	15	25	20	15	0	0
EDU602	Educational Leadership and Management	Major	20	20	20	20	20	0	0
TPTB519	Teaching Practice – II	Major	10	20	30	20	20	0	0
EDUA630	Research Project	Major	0	0	30	30	40	0	0
SOC602	Sociology of Education	Interdisciplinary	15	10	10	20	10	10	25
MGTE630	Knowledge Management	Interdisciplinary	10	15	10	15	10	10	30
MCM101	Introduction to Mass Communication	Interdisciplinary	15	10	10	10	10	5	40
PSC201	International Relations	Interdisciplinary	15	10	10	15	10	10	30
PSY101	Introduction to Psychology	Interdisciplinary	20	10	10	15	10	5	30
SOC301	Introduction to Social Work	Interdisciplinary	15	15	10	15	10	5	30
MGT503	Principles of Management	Interdisciplinary	20	10	20	10	10	5	25
MCM301	Communication Skills	Interdisciplinary	10	10	5	10	5	5	55
SOC604	Community Development	Interdisciplinary	15	10	10	15	10	5	35

According to the data, there is a significant connection between major courses and PLO1, PLO3 and PLO4 as they refer to knowledge, application and evaluation skills. The major courses however do not address PLO6 and PLO7 at all. This gap is bridged by interdisciplinary courses since they play a major role in PLO6 (innovation) and PLO7 (social responsibility). The total outcome indicates that the key courses are mostly consistent with PLO1 to PLO5 and PLO 6 or PLO7 are covered by interdisciplinary courses only.

Merged Results

The B.Ed. curriculum of the Virtual University of Pakistan is very much aligned with the foundational teaching competencies (PLO1 to PLO5) but the outcomes of the digital literacy, innovation and social responsibility (PLO6 and PLO7) are only covered through interdisciplinary courses.

Conclusion

The conclusion is that B.Ed. undergraduate curriculum at the Virtual University of Pakistan lays stress on basic teaching skills and does not give more emphasis on the concept of digital literacy, innovation and social responsibility but is facilitated by interdisciplinary courses.

Discussion

In this paper, the researchers investigated on how the Course Learning Outcomes (CLOs) relate to the Program Learning Outcomes (PLOs) in the B.Ed. program at the Virtual University of Pakistan. The findings were highly consistent with the basis of the teaching competencies (PLO1- PLO5 such as Pedagogy, lesson-planning, assessment and ethics). Nevertheless, the digital competence (PLO6) and innovation/ social responsibility (PLO7) were quite under-represented. These results are consistent with previous studies by Rehmani (2006) and Khan and Azam (2020) that concluded schoolteachers in Pakistan are being trained to use key pedagogical approaches but lack training on the digital skills and innovativeness. Globally, the same trend was reported in the feeling of Korthagen (2010) who identified foundational competencies in teacher preparation programs as common. Nevertheless, the results are incompatible with the related international models, such as OECD Education 2030 and ISTE (2021), that places much emphasis on digital literacy and global citizenship. According to Ertmer & Ottenbreit-Leftwich (2013) and Banks et al. (2005), training of teachers should

incorporate the aspect of ICT and social responsibility whereby the curriculum is weak. The gaps can be a result of the curriculum being out of place, insufficient training of the faculty with ICT, and absence of incorporating trends in the global. The model that will be proposed, the Three-Level Curriculum Model, attempts to adjust this by keeping pedagogy at the central level (Level 1), digital skills at a lower level (Level 2), and the level of innovation and social awareness at an even lower level (Level 3), which is in correspondence with international requirements.

Proposed Model of Curriculum Reform

The B.Ed curriculum at the Virtual University of Pakistan gives substantial importance to fundamental teaching skills such as educational knowledge, teaching method, lesson planning, and classroom evaluation (PLO1-PLO5). Nevertheless, it is not sufficiently inclined on digital literacy (PLO6) and equipping the teachers with the innovativeness and social responsibility (PLO7).

To address this problem, we propose the following basic Three Level Model of Curriculum:

- **Level 1 Strong Teaching Foundation:** Major focus must be on core teaching skills like planning lessons, managing classrooms, and evaluating students.
- **Level 2 Enhance More Digital Skills:** To enhance the digital competence, update current courses and incorporate digital tools, use of ICT and online instruction in additional disciplines.
- **Level 3 Promote Awareness of innovation and societal needs:** Introduce such subjects as leadership, reflective thinking, community service, and global learning into interdisciplinary studies and final assignments.

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