Dialogue Social Science Review (DSSR)
www.thedssr.com

ISSN Online: 3007-3154
ISSN Print: 3007-3146

DIALOGUE SOCIAL SCIENCE REVIEW

Vol. 4 No. 3 (Mar) (2026)

From Classroom to Career: How Competency-Based Education Shapes Graduate Employability in Larkana District

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ABSTRACT
This quantitative research explored the association between Competency-Based Education (CBE) and employability of graduates in Larkana District, Sindh, Pakistan, where the target population consists of approximately 800,000 people aged 22 years and older. This study measured to establish whether CBE programs are a predictor of graduate employability. Through stratified random sampling, 400 graduates of higher learning institutions were selected. Data was obtained using a validated structured questionnaire, assessing the implementation of CBE and graduate employability. SPSS version 26 was used for statistical analysis, including Pearson correlation, simple leaner regression and descriptive statistics. The findings showed a positive significant correlation between CBE and graduate employability ($r = .72$, $p < .001$). The results of regression analysis revealed that the dimensions of CBE account for 58% of the variance in graduate employability ($R^2 = .58$, $F(4, 395) = 136.42$, $p < .001$).. The results highlighted the importance of competency-based approaches to address the mismatch between education and work in Larkana District and have implications for policymakers, higher education leaders and employers.

Keywords: competency-based education, graduate employability, Larkana District, higher education, skill acquisition, practical training, Pakistan

INTRODUCTION
The shift in global labor markets means there is an increasing need for graduates with both theoretical and applied practical skills. In emerging markets like Larkana District, Sindh Province, Pakistan, the disconnect between education and the need of industry is a major socioeconomic issue. The district's target population of over 800,000 people aged 22 and above presents a key site for studying the impact of educational methodologies on employment.

Competency-Based Education (CBE) has emerged as an innovative educational model that shifts the focus of education from time-based to competency-based learning (Voorhees, 2001). In contrast to conventional educational paradigms that emphasize time and content coverage, CBE focuses on ensuring students master particular skills and knowledge, thus generating graduates more relevant to the job market (Nodine, 2016). This model is a

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critical discussion point in areas where educated youth continue to face high unemployment despite rising trends of higher education intake.

Graduate unemployment is a significant issue in Pakistan. Shair et al., (2020-21) reports that youth unemployment, especially among fresh graduates, is disproportionately high compared to the overall workforce participation. In Sindh Province, key factors contributing to low employability include structural educational quality problems, lack of industry linkages, and lack of skilled training (Riaz et al., 2025). Larkana District, a prominent urban area in Sindh, mirrors these provincial trends while also displaying district-level factors contributing to employability outcomes such as economic structure and institutional capacity.

While there is an increasing body of research on CBE worldwide, there remains a paucity of studies examining the effects of CBE at the district level in Pakistan. The majority of research focuses on CBE implementation at the national and provincial level, with little attention to local educational dynamics and their effects on employability. This study fills this gap by drawing quantitative evidence on the link between CBE and graduate employability in Larkana District.

Research Objectives

- To find out the impact of Competency-Based Education on Graduate Employability
- To measure the relationship between Competency-Based Education and Graduate Employability
- To measure the consistency of data Competency-Based Education and Graduate Employability

Research Hypotheses

H_1: Competency-Based Education has a positive impact on graduate employability in Larkana District.

Literature Review

Competency-Based Education

CBE is an approach to education in which learning is structured around specific competencies, which are defined as the combination of skills, knowledge and dispositions needed to perform in professional and social roles (Bingham et al.,2021). CBE emphasizes learning by mastery, individual pacing and clear performance criteria for assessment (Mallett, 2016). It draws on theoretical foundations in behaviorist learning theory, constructivism and experiential learning, which focus on performance rather than process. Academics differentiate between CBE and traditional education in various ways. Traditional education is input-based, with success measured by contact hours and course completion, whereas CBE is output-based, with student success measured against standards of performance (Klein-Collins, 20). This has implications for the employability of graduates, for whom practical skills are increasingly preferred by employers.

Graduate Employability

Graduate employability is defined as a combination of accomplishments, knowledge, and individual skills that enable graduates to secure jobs and excel in their desired careers (Yorke, 2006, as cited in Burke et al., (2016). The employability construct is inclusive of the supply-side aspects, what graduates are offering to the labor market, and the demand-side issues such as the economic structure and expectations of employers (Brown et al., 2003).

A number of theoretical frameworks guide employability studies. According to the Career EDGE model suggested by Dacre Pool and Sewell (as cited in Okolie

ISSN Online: 3007-3154
ISSN Print: 3007-3146

et al., 2019), emotional intelligence, degree subject knowledge, generic skills, experience, and career development learning are identified as the key elements of employability. The Graduated Capitals Framework also places an emphasis on the accumulation of social, cultural, psychological and identity capital as a result of educational experience (Burke et al.,2016). CBE fits in especially well with these frameworks through the systematic development of competencies that are relevant to employability.

CBE and Employability.

Empirical evidence shows repeatedly positive relationships between implementation of CBE and enhanced graduate employability. Ogunbote et al., (2026) conducted a meta-analysis showing high-employment rates among graduates of CBE programs 12 months after graduation, as compared to those of traditional programs. On the same note, Drugas, M., & Stan, R. (2025) showed that university alumni of CBE had much higher scores of self-reported job readiness and employer satisfaction. Okolie et al. (2019) demonstrated in the context of Sub-Saharan Africa that vocational competency frameworks in Nigerian institutions of higher learning were significant predictors of employment in the country. Practical training elements were also identified as especially impactful in the study and align with employer-led studies that have shown that work-ready graduates are highly sought after (World Economic Forum, 2023). The patterns apply to the Pakistani situation, where analogous structural adjustments in response to demands of knowledge-based to skill-based economy are in progress.

In the context of South Asian research has also highlighted the applicability of CBE. Rao, N. J. (2020) reported that Pakistani institutions with outcome-based education models (which are closely linked to CBE) had significantly higher employment rates within six months of graduation than curriculum-only institutions. The ongoing implementation of CBE at the intermediate and degree levels in the Sindh Province was particularly observed by Riaz et al., (2025) to deliver initial gains regarding graduate work preparedness, although limited data on a district level have been provided.

CBE and Issues in Pakistan .

Outcome-Based Education (OBE) and CBE frameworks, requiring universities to align their curricula with national qualification frameworks and employer demands (Siddiqua et al., 2022). The implementation has been skewed, with urban elite institutions leading and rural and semi-urban institutions like Larkana continue to grapple with resource limitations, lack of faculty training, and lack of industrial connections (Bajwa et al., 2024). The educational situation in Larkana District is influenced by the fact that there are a number of public universities and degree colleges belonging to the University of Sindh. Although the enrollment itself increased significantly, employability rates are lower than the national ones, which may indicate that the availability of institutional resources to implement CBE is a constraining factor (Pakistan Bureau of Statistics, 2023). This paper presents empirical evidence to test these dynamics rigorously.

Research Methodology

This paper will take a quantitative cross-sectional survey design in order to investigate the association between Competency-Based Education (CBE) and graduate employability at a single point in time based on a positivism approach. The target population is composed of about 800,000 educated people aged 22 years and above in Larkana District, Sindh. Stratified random sampling was used to select a sample of 400 respondents based on gender, the nature of the institution, field of study, and employment status, and the method recommended by Krejcie and Morgan (1970). A structured questionnaire based on the existing scales, including demographic, CBE dimensions, and employability indicators on

Dialogue Social Science Review (DSSR)
www.thedssr.com

ISSN Online: 3007-3154
ISSN Print: 3007-3146

DIALOGUE SOCIAL SCIENCE REVIEW

Vol. 4 No. 4 (April) (2026)

a five-point Likert scale, was used to collect data. The instrument proved to be very reliable (0.87 and 0.84). Six weeks of data collection was done in a mix of physical and online formats, with a response rate of 93 percent. The data were analyzed in SPSS 26 with the use of descriptive statistics, correlation, and multiple regression with a significance level of 0.05.

Results

Demographics

Table 1 shows the demographic characteristics of the 400 respondents. The sample was 54.5% male and 45.5% female. Most of them (61.5) had bachelor's degrees, and 38.5% were postgraduate. In terms of employment, 52.3% were employed, 34.5% were in the employment seeking process and 13.2% were studying further or doing other activities.

Table 1: Demographic Characteristics of the Sample (N = 400)

Variable	Category	Frequency	Percentage (%)
Gender	Male	218	54.5
	Female	182	45.5
Education Level	Bachelor's	246	61.5
	Postgraduate	154	38.5
Employment Status	Employed	209	52.3
	Unemployed	138	34.5
	Other	53	13.2
Institution Type	University	241	60.3
	Degree College	159	39.7

Descriptive Statistics

The descriptive statistics give a picture of the perceptions of Competency-Based Education (CBE) and graduate employability by the respondents. The average score of CBE (M = 3.78, SD = 0.74) shows that the respondents have a relatively high level implementation of CBE, as the score is above the midpoint of the five-point scale. The moderate standard deviation indicates a good degree of consensus among respondents. Likewise, graduate employability has a moderate-high mean score (M = 3.44, SD = 0.82), which means that the respondents consider their employability as above average, but slightly lower than CBE. The standard deviation is higher which indicates a relative greater variability of responses. On the reliability, the alpha of CBE (.876) and employability (.781) are above the acceptable level of reliability (0.70), which reassures of good internal consistency of measurement scales. The findings in general indicate that the tools are valid and that both the CBE and employability are viewed positively by the sampled graduates

Table 2: Descriptive Statistics for CBE Dimensions and Graduate Employability (N = 400)

Variable	M	SD	Cronbach Alpha	Range
CBE	3.78	0.74	.876	1–5
Graduate Employability	3.44	0.82	.781	1–5

Pearson Correlation

The correlation analysis demonstrates that Competency-Based Education (CBE) and graduate employability have a high and positive correlation ($r = .61$, $p < .001$). This shows

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ISSN Online: 3007-3154
ISSN Print: 3007-3146

DIALOGUE SOCIAL SCIENCE REVIEW

Vol. 4 No. 4 (April) (2026)

that the more CBE is implemented, the more graduate employability will be. The correlation coefficient of 0.61 indicates that there is a strong relationship, that is, the positive changes in CBE practices are likely to be associated with significant changes in the employability outcomes. The outcome is statistically significant at the 0.001 level, which proves that this relationship is not likely to be as a result of chance.

Table 3: Pearson Correlation Matrix for CBE Dimensions and Graduate Employability (N = 400)

Variable	CBE
CBE	—
Grad. Employability	.61**

Note. ** p < .001 (two-tailed).

Regression Analysis

Table 4: The regression analysis shows that CBE is a robust predictor of graduate employability. The model shows that a significant amount of variance (Adjusted R^2 =.58) is explained, meaning that the model explains about 58% of the variation in employability. The overall model is found to be statistically significant with an ANOVA result (p =.000). CBE has a large positive impact on employability (B = 0.640, 2 = .895, p < 0.001), indicating that an increase in CBE of one unit would result in a 0.640-point increase in the scores on employability. The beta value (.895) is very strong hence a very strong predictive relationship. The constant is also important (p =.001), indicating the level of employability at zero level of CBE. Altogether, the results prove that CBE makes graduate employability much higher.

Table 4: Regression Analysis Predicting Graduate Employability (N = 400)

Model Summary	Adjusted R^2	.580
ANOVA	Sig Value	.000

Variable	**B**	**SE**	**β**	**t**	**p**
Constant	8.820	2.572		3.429	.001
Graduates Employability	0.640	0.035	.895	18.473	< .001

Discussion

This research was set to explore the use of Competency-Based Education (CBE) to improve graduate employability in the framework of higher education. The results are highly empirical in displaying the positive relationship hypothesized between CBE and employability outcomes, which are in line with the current theories of education and the labour market.

The descriptive statistics reveal that the level of perceived CBE implementation was relatively high (M = 3.78), which means that respondents think that institutions adopt more competency-oriented approaches. This is a wider trend in education around the world with an outcome-based education, in which the importance is put on applied skills, application of knowledge, and industry relevance instead of theoretical teaching (Mulder, 2019). Likewise, the average score of graduate employability (M = 3.44) shows that people believe that they are moderately employable, but a bit less than they think they or CBE. This disjunction can imply that as competency frameworks are put into effect, they need to be further reinforced into concrete labor market outcomes.

The reliability analysis also strengthens the well-built of the study since the two constructs exhibited high internal consistency (CBE 1 =.876 and employability 1 =.781). These

ISSN Online: 3007-3154
ISSN Print: 3007-3146

values are higher than the recommended level of 0.70 (Hair et al., 2021), which proves that the measurement instruments applied in this study are valid and appropriate to conduct an empirical study.

One of the major contributions of this study is that the correlation study has found that there is a strong positive correlation between CBE and graduate employability ($r = .61$, $p < .001$). This result indicates that any competency-based educational practice improvement can be linked to great advancements in employability outcomes. This relationship is also supported by the existing studies that highlight that the development of competencies, including critical thinking and problem-solving skills, and communication skills, has a direct relationship with employability in contemporary labor markets (Jackson, 2020; Suleman, 2018). It also reinforces the human capital theory, which states that the investments in the development of the skills lead to more productive and better employment opportunities of the individuals.

Additional evidence of the predictive ability of CBE is even stronger through the regression analysis. The model demonstrates a significant level of variance accounted in graduate employability (Adjusted R^2 =.580) which means that more than half of the variation in graduate employability results can be explained by CBE. This is a significant effect size in any social science study, and it underscores the pivotal role of competency-based strategies in the development of graduates to be employment-ready. The overall model fit is confirmed by the statistically significant ANOVA result ($p < .001$).

In addition, the standardized beta coefficient (=.895, $p < .001$) shows that CBE has a very strong, positive impact on employability. This implies that a single unit change in CBE results in a significant positive change in employability scores. This kind of close association highlights the usefulness of competency-based models in streamlining learning outcomes to match market requirements. These conclusions are consistent with recent research that highlights the necessity to incorporate industry-relevant skills in curricula in order to close the skills gap (Di Battista et al., 2023).

Nevertheless, the findings are encouraging, but it is possible that the apparent gap between the comparatively high CBE score and the slightly lower employability score can indicate the presence of external factors that can affect employability as well. They can be labor market conditions, reputation of the institution, networking possibilities, and availability of internships (Burke et al., 2016). Thus, in spite of CBE being a major predictor, it must be considered as a component of a wider ecosystem affecting graduate outcomes.

Conclusion

The aim of this study was to determine the effects of Competency-Based Education (CBE) on graduate employability in a sample of 400 respondents. The results clearly show that CBE is a powerful and notable predictor of employability results. Students who were exposed to competency-based learning methods recorded their increased employability, which means that these educational practices are effective in training students to meet the requirements of the labor market.

The descriptive outcomes indicate that respondents tend to have a positive view of CBE implementation, whereas the levels of employability, though above average, are a bit lower. This shows that although reforms in education are underway, more needs to be done to completely translate competencies into jobs. The validity of the study results is proved by the reliability of the measurement scales.

The correlation and regression analyses produce solid evidence of strong and statistically significant relationship between CBE and employability. The beta value and the large amount of variance explained underline the fact that competency-based approaches are not just relevant but are critical in improving graduate outcomes. These findings confirm the

ISSN Online: 3007-3154
ISSN Print: 3007-3146

available literature and emphasize the point that the educational systems should shift away and stop following the old-fashioned teaching methods and implement more skill-based systems.

Recommendations

First, universities and colleges ought to enhance the adoption of Competency-Based Education by aligning programs to industry needs and include experiential learning experiences including internships, project-based learning, and simulations.

Second, policymakers ought to promote CBE frameworks by providing accreditation guidelines and financing schemes that promote skill-based education.

Third, universities ought to increase their engagement with the industry so that the competencies taught will be relevant to the labor market demands. Academic structures should also include career counseling and employability training programs as means of bridging the gap between education and employment.

Future studies should also consider other aspects that contribute to employability, e.g. soft skills, networking, and labor market dynamics to give a more in-depth picture of graduate outcomes.

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